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DIABETES MELLITUS IN CHILDREN AND YOUNG ADULTS.*

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I have chosen to discuss diabetes in children and young adults. My reasons for doing so are threefold: First, a selfish one, the interest and fascination one derives from dealing with patients in this age period; second, because of the increasing responsibility of the profession towards this group, who are daily becoming more numerous through the use of insulin, which keeps them alive; third, one deals here with the purest type of the disease uncomplicated by the changes of age, and it is hoped something may be added by a study of this kind.

The disease during this period is more severe than in the later years, and often progressive. Certainly the latter was true before the use of insulin. Heredity plays an important part, 35 per cent according to Joslin and White,[1] and 44 per cent in those who have lived longer than ten years, the parent often developing the disease after the child.

Diabetic children are prone to be overdeveloped at the onset of their disease, especially in height and mental acuity. The former may, according to White,[2] cause a functional strain of the pancreas.

Studies on the pathology have emphasized the paucity of findings, the most common one being a lymphoid infiltration of the pacreas.[3] Recent observations on the condition of the vessels in these cases have shown that arteriosclerosis is very prevalent, being found in 36 per cent of fifty cases examined by Shepardson[4] using X-ray of the extremities. All of these were under forty years of age. Warren and Page[5] also report it as a frequent finding at autopsy. This has led to an intensive study of the lipoid metabolism, which so far has not explained the development of this condition at such an early age.

One is struck by the varying types of diet used in treatment. However, a distinct tendency towards a normal diet is evident, and an amount of protein adequate for the patient's need at his particular age is an established principle.

Since 1923, forty cases of diabetes have been observed at the University of Virginia Hospital, who fall under the age of twenty-one years. Fifteen of these cases were males and twenty-five females, the youngest being two years of age and the eldest twenty years old, at the time of their admission.

Three only were colored. Twenty-two are now known to be living, thirteen (31 per cent) dead, and five have not been recently heard from.

Table I gives the cause of death in those known to be dead.

Table II gives for the living cases the length of time in years since first admission.

Table III gives the important facts regarding each of the forty cases.

TABLE I

CAUSE OF DEATH

Acidosis or Coma	8
Tuberculosis	2
Carbuncle	1
Shock (?)	1
Unknown	1
	13

TABLE II

KNOWN LIVING CASES

NUMBER OF YEARS SINCE FIRST ADMISSION

Less than one year	3
One to two years	6
Two to three years	2
Three to four years	3
Four to five years	2
Five to six years	1
Six to seven years	1
Seven to eight years	4
Eight to nine years	1
	22

*From the Department of Internal Medicine, University of Virginia.
Read at the annual meeting of the Medical Society of Virginia, in Roanoke, October 6-8, 1931.

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TABLE III

Case No.	Name	Sex	Age	Date Admitted	Condition	Weight lbs.	Weight normal	Discharge Diet			Insulin		Remarks
								C.	P.	F.	Then	Now	
1	F.M.	F.	19	3-30-23	Coma								First case treated with insulin here. Died.
2	M.D.	M	16	4-3-23	Acidosis	110		70	60	190	0		Last heard from 1927. Then taking 30 units insulin. Mild T. B.
3	M.T.	F	14	4-7-23	Acidosis	72		50	50	100	0		Would not stay on diet. Died in past year. Father diabetic.
4	M.V.	M	10	11-9-23	Severe	63½	71	55	35	160	0		Left against advice with severe acidosis. Died at home in coma.
5	J.K.	F	14	11-12-23	Coma	69½	83	60	55	150	0	?	Eats more carbohydrate. Working. Has not lost a day in two years.
6	J.D.	M	5	12-20-23	Coma	36¼	42	50	22	80	6	6	Taking more diet. Weight 55¼ lbs.
7	F.D.	F	14	1-13-24	Mild	66		46	38	138	0		Now working in hospital as nurse. Restricts diet only moderately.
8	E.F.	F	17	1-15-24	Mild	109	117						Left against advice. Seen in 1929. No sugar. Diet normal.
9	R.S.	F	10	2-4-24	Coma	46	64	55	30	125	0	58	Patient has had many admissions. Areas of superficial gangrene on chest, hands and feet. Weight 113 lbs. Severe case.
10	R.P.	F	12	3-29-24	Coma	60	78	55	46	135	44	65	Weight now 131 lbs. Many admissions with severe infection. Now doing well.
11	E.B.	F	8	10-3-24	Coma	43	51	55	35	80	24		Died May 30, 1925, at home. Probably in coma.
12	B.C.	F	13	12-20-24	Coma	71	89	60	45	180	0		Died in coma at home within the past two years.
13	J.F.	F	8	10-8-25	Mild	50		68	36	127	9		Died in coma at home 2½ years after admission.
14	S.M.	F	9	10-20-25	Coma								Died in coma three hours after admission. Symptoms of acidosis one week before.
15	L.H.	M	8	10-24-25	Acidosis	40	60	64	39	134	0	24	Now weighs 76½ lbs. Hard to keep sugar free, but doing fairly well.
16	C.C.	F	19	11-24-25	Mild	109½	126	100	58	180	0		Died in October, 1926. Advanced tuberculosis. Would not stay on diet. Sister had diabetes.
17	F.C.	F	16	12-29-25	Mild	101		57	41	206	0		Later insulin required. Had syphilis and died of tuberculosis in 1929. Sister had diabetes.
18	J.T.	M	2	8-16-26	Coma								Received 45 units of insulin and died in convulsion in first 24 hours. ? shock.
19	M.B.	F	7	9-7-26	Mild	51¾		75	45	100	0		Died in coma February, 1927, at home.
20(a)	M.M.	F	17	10-28-26	Coma	80	110	65	65	200	0	29	Has recently had typhoid fever Required 365 units insulin in 12 hours for coma, on a much higher diet. Case doing well.

C Carbohydrate P Protein F Fat

(a) Died in Washington in May, 1932, Infection and Coma.

TABLE III (Continued)

Case No.	Name	Sex	Age	Date Admitted	Condition	Weight lbs.	Weight normal	Discharge Diet			Insulin		Remarks
								C.	P.	F.	Then	Now	
21	C.C.	M	11	3–18–27	Acidosis	75	80	60	50	100	30		Died at home in 1929 with carbuncle.
22	N.S.	M	17	10–16–27	Mild	152¼	117	80	80	150	36		Not traced. Diagnosis was made by tolerance test which precipitated sugar.
23	L.H.	F	14	11–21–27	Severe	95	94	60	50	150	18	22	Weight 100. Has grown 4 in. Seems to be doing fairly well.
24	C.G.	M	18	1–21–28	Moderate	98	122	55	50	175	0	52	Weight 121. Height same. Mental condition poor. Melancholia. Sister has diabetes.
25	J. N.	M	5	1–25–28	Mild	44	46	75	55	175	0	19	Put on diet C190, P75, F90. Has been able to reduce insulin to 19 units a day. Hard to keep on diet, hence high carbohydrate. One year ago had appendix abscess.
26	A. P.	F	14	2–13–28	Mild	100½	112	70	90	120	0	33	Sister has diabetes. Weight now 125½ lbs. Doing very well.
27(b)	L. E.	F	15	10–24–28	Mild	100½	106	65	60	120	5	60	Weight 127½. Patient did well for 2½ years. Suddenly lost tolerance, no cause found.
28	C. M.	M	16	3–11–29	Acidosis	121	133	75	60	165	25		Not traced.
29	E. R.	M	6	3–30–29	Mild	37	42	90	40	110	0		Dead. Coma at home. Deaf and dumb, impossible to keep on diet.
30	D. D.	F	13	5–9–29	Mild	104	94	Rest	ricte	d C.	H.		Sugar free. Weight 104. Very mild case.
31	C. S.	M	14	10–7–29	Severe	91	114	80	80	160	74	30	Weight 128 lbs. Working. Stays on diet. Doing very well.
32	F. L.	F	18	3–7–30	Mild	105¼	130	100	80	140	4	34	Weight 114 lbs. Decrease in tolerance apparently due to slight antrum infection. Case doing well. Tolerance improving.
33	S. B.	M	20	5–27–30	Mild	128	139	85	95	160	20	.	Not traced.
34(c)	O. W.	F	2	6–23–30	Severe	24	26	70	45	80	2	20	Weight 28 lbs. Hard to keep on diet. Colored child.
35	P. B.	M	12	9–6–30	Severe	79¼	85	100	100	120	21	30	Weight now 107. Doing very well.
36	R. B.	M	10	10–2–30	Moderate	57½	60	110	100	125	8	30	Weight 76 lbs. Has recently had insulin adjusted. Doing well.
37	H. B.	F	8	10–11–30	Moderate	35¾	51	60	40	100	10	8	Weight now 57 lbs. Doing well.
38	C. W.	F	13	1–30–31	Severe	69	86	100	100	130	34	48	Weight now 92½ lbs. Severe case. Mother has diabetes.
39	M. C.	F	8	3–15–31	Moderate	48¾	53	100	100	90	11	7	Weight now 55 lbs. Father has diabetes. This case doing well.
40	B. B.	F	15	4–22–31	Coma	94	118	85	100	130	45	42	Weight now 101 lbs. This patient has a low mentality and does not follow diet or insulin. Prognosis poor.

(b) Tolerance now improving again.
(c) Has since died at home. (Probably coma.)

Discussion

Five only of the living cases show a definite gain in tolerance, Nos. 5, 6, 7, 31 and 39, but the encouraging fact is that this gain has been shown by three of the cases who have been under treatment for over five years.

It will be noted that many of these cases could be handled without insulin on their first admission; later, almost invariably, insulin was required, which emphasizes the severity of the disease at this period. The adjustment of insulin in many cases has occasioned extreme difficulty. Very few have been able to take their injections in equally divided doses. The correct spacing has been arrived at in various ways, examining specimens of urine voided one hour after each meal, which will suffice in many; examining each voided specimen, which is necessary in some instances, and getting a twenty-four hour blood sugar curve, which has been rarely necessary. I have found that in the severe cases there is a tendency for the blood sugar to rise during the night, resulting in sugar appearing in the urine either before or after breakfast, associated with a high fasting blood sugar. A few of these may be corrected by dividing the before supper dose in half, and giving the last half at bedtime. Others require an additional dose at bedtime, and several require a dose at four o'clock in the morning.

Following the work of Porges,[8] in Austria, Sansum[7] and Rabinowitch,[6] on this continent, it will be noted that the carbohydrates in our diets have been materially increased in the later years. However, in only one case in this group, No. 25, have we gone as far as they have. So far this child has done very well, and it is intended to carry out further clinical investigation with very high carbohydrate diets in selected cases.

Case No. 32 demonstrates the loss of tolerance occasioned by an unsuspected focus of infection.

Familial diabetes is frequent in this series, as has been noted by others.

The percentage of deaths occurring from coma is high. Perhaps some of these could have been saved. If one sees the case early enough, and pushes the insulin there is little excuse for losing an uncomplicated case. The family should be taught to recognize the early symptoms and call for help. Case No. 20 recently required 365 units of insulin in twelve hours to bring her out of coma.

It is believed our results demonstrate that it is possible to carry a juvenile diabetic to the threshold of adult life, even though the path is beset by serious illness. Those who survive on the whole are normal individuals as regards weight and height, and often have more than the average mental capacity.

Summary

An analysis of forty cases of diabetes in patients under twenty-one years of age is presented, and certain points arising out of this analysis are emphasized.

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SUBPHRENIC INFECTION—A CLINICAL CONSIDERATION OF ITS DIAGNOSIS AND TREATMENT.*

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Since Barlow's original article appeared in 1845 upon the present subject, physicians have struggled to master the problems of diagnosis and treatment of a disease whose symptoms and signs are common to a pathologic process involving the tissues either of the lower thorax or upper abdomen. Frequently this picture is further complicated by a post-operative, suppurative, surgical wound of the abdomen. Because of the elusiveness of the symptoms and signs, and because of this post-operative state, the diagnosis has been most baffling; and because this territory is harbored in part at least by a bony thoracic cage, its surgical approach has been most arduous. The mortality of this malady has been variously estimated by different authors to range from 30 to 100 per cent. A review of the subject reveals that this high mortality has been due very largely to late diagnosis, to contamination of serous cavities while attempting surgical approach, and

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to inadequate surgical drainage. Because this appalling mortality still prevails, and because it is attributed to late recognition and faulty surgical drainage, the writer feels it would not be amiss to discuss once more the diagnosis and treatment of this disease, despite numerous splendid articles which have appeared in the literature by most eminent authorities.

There is some confusion in the literature concerning the boundaries and divisions of the subphrenic spaces, but the description of Bernard appears to rank with those most popularly accepted.

- Intraperitoneal
  - right
    - anterior
    - posterior
  - left
    - anterior
    - posterior
- Extraperitoneal
  - right
  - left

The intraperitoneal space is divided into a right and a left by the falciform ligament of the liver, and each of these into an anterior and posterior by the lateral ligaments.

The right extraperitoneal space is that area uncovered by peritoneum between the folds of the coronary ligaments as they are reflected onto the diaphragm.

The left extraperitoneal space lies above the upper pole of the left kidney where the peritoneum is reflected onto the diaphragm.

I shall not dwell upon the anatomy but shall dismiss the subject by saying that a knowledge of it is of particular importance to both roentgenologist and surgeon.

Etiology

The etiology of subphrenic abscess is variable. Perforation of a hollow viscus, or intra-abdominal suppurative processes from whatever cause are accused of being the etiologic factor in about two-thirds of all cases.

In a second but smaller group of cases, the infection is carried through the lymphatics or by direct extension of inflammations from the retro-peritoneal tissues such as may be caused by a perinephric abscess or a retrocecal appendix. An occasional abscess is found to be due to a focus remote from the subphrenic space.

In a third group of cases, the primary lesion is found in the thorax. Nine of Bernard's seventy-six cases, and eighteen of four hundred and forty-eight cases collected by Archibald were of this type. It is sometimes a difficult matter to tell whether the primary lesion is above or below the diaphragm. When the two co-exist, the evidence must be strong to prove the thoracic origin when one realizes that the lymphatic drainage is upward through the diaphragm.

The colon bacillus is the organism most commonly found in subphrenic abscesess. These are often associated with streptococci, staphylococci and numerous anaerobic organisms.

Not all cases of subphrenic infection undergo suppuration and abscess formation. Attention has been called to this by Neuhof who studied nine hundred and seventy-two cases of appendicitis and found fifteen cases of subphrenic infection which did not progress to suppuration. Other cases have been recorded by Ochsner, Lee and Clendening.

The origin of infection in eighty-four cases studied by Fifield and Love is as follows:

Table 1

	Number of Cases	*Per Cent of all Cases*
Appendicitis	30	35.7
Perforated duodenal ulcer	12	14.2
Perforated gastric ulcer	12	14.2
Operations on stomach	9	10.7
Gall-bladder	5	5.9
Kidney	2	2.3
Chronic gastric ulcer	1	1.1
Carcinoma of stomach	1	1.1
Carcinoma of esophagus	1	1.1
Fractured pelvis	1	1.1
Rib	1	1.1
Unknown	9	10.7

The origin of infection in four hundred and ninety-six cases collected from the literature by Perry will be seen in table two:

Table 2

	Per Cent of All Cases of Subphrenic Abscess
Appendix	25.3
Stomach	23.1
Duodenum	3.2
Liver and bile passages	8.8
Hydatid cysts	5.0
Intestine	2.4
Pancreas	1.0
Spleen	0.2
Kidney	4.6
Ribs	1.3
Intra-thoracic lesions	4.9
Female genital organs	1.3
Traumatic lesions	3.4
Metastatic	4.4
Unknown and various causes	5.5

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In one thousand cases reviewed by Whipple, the origin of the infection was as follows:

TABLE 3

	Per Cent of All Cases of Subphrenic Abscess
Stomach	25%
Appendix	21%
Biliary tract	16%
Duodenum	5%

In 1909 Lance studied the origin of the infection in one thousand cases and tabulated the following results:

TABLE 4

		Per Cent of All Cases of Subphrenic Abscess
Appendicitis		20%
Stomach and duodenum		30%
Liver and gall-bladder		13%
Miscellaneous	Pancreas Spleen Colon Pleura	37%

In 102 cases reported from the Mayo Clinic, the primary lesion occurred in the stomach and duodenum twenty-two times, the liver and gall-bladder thirty-three times, the appendix twenty-two times, and in a focus of infection elsewhere sixteen times.

Lockwood found in a group of 3,000 cases collected from the literature that abscesses developed in from .6 per cent to 1 per cent in all cases of appendicitis, but the incidence varies considerably according to different authors from .34 per cent to 6.1 per cent of all cases of appendicitis, and 6.6 per cent to 92.8 per cent of all residual intra-abdominal abscesses.

In 2,400 cases of appendicitis operated upon by the late John B. Deaver, subphrenic abscess occurred twenty times.

Despite slight discrepancies, it becomes evident from the above statistics that the most frequent causes of infection and suppurative processes of the subphrenic spaces begin in the appendix, stomach, duodenum, and biliary passages.

The question naturally arises as to why the infection localizes beneath the diaphragm, and attempts have been made to explain this on an anatomical basis and the subsequent aid of gravity. The posterior abdominal wall is divided by the vertebrae into two deep gutters; the lumbar elevation also serves as a watershed for accumulations of fluid within the peritoneal cavity. It is generally conceded that these abscesses are far more common on the right side, and peristaltic action of the colon has been offered as a possible explanation for this. The formation of subphrenic abscess is more common in males than females, and this has likewise been explained on the basis of anatomical variations between the female and male pelvis permitting the paracolic groove to drain more readily in the pelvis of the female. Of 113 cases reported from the Mayo Clinic by Lockwood in 1921, eighty-four were males and only twenty-nine females.

Symptoms and Signs

The symptoms and signs of subphrenic infection vary with the etiology, location, and stage of development of the inflammatory process. If the abscess originates from a perforated gastric or duodenal ulcer, the symptoms may be abrupt in their onset, while those originating from mere soiling of the peritoneal cavity may be insidious in their development. If the abscess is located in one of the anterior spaces, the signs are usually referable to the upper abdomen; conversely, if the abscess forms in one of the posterior spaces, the signs are often referable to the chest or lumbar region of the affected side. If the patient is seen early in the course of the disease, the abdominal signs are more pronounced, but if the patient is seen late in the course of the disease the chest manifestations may be more pronounced and indeed may completely overshadow the abdominal signs. There is no single symptom or sign pathognomonic of the disease, but there are certain manifestations which lead one to suspect subphrenic infection. Whenever an unexplained fever persists after an abdominal operation, particularly when there has been contamination or suppuration within the peritoneal cavity, one should at once think of the possibility of the development of a subphrenic abscess, just as one under similar circumstances thinks of the development of empyema after pneumonia. In like manner, if there is definite improvement for a certain interval of time after such an operation, with a return of constitutional symptoms of infection accompanied by signs referable to the region of the diaphragm, subphrenic abscess should be considered. To think of the condition is a great aid in making the diagnosis, because the initial manifestations of the disease are frequently erroneously interpreted for chest complications such as pneumonia, pleurisy, or empyema. In the great majority

of cases subphrenic abscess develops in the course of some other infection and there is merely an increase in the general constitutional symptoms and signs.

Pain is often the presenting symptom; it is usually located at the costal margin between the eighth and eleventh ribs, and between the axillary lines. It is often referred to the shoulder, scapula or lumbar regions. Frequently it is dull or aching in character, but occasionally it may be sharp and lancinating; it is often aggravated by deep inspiration. In the average case the temperature ranges from 99° to 102° or more, and is of the septic, remittent type, with a corresponding increase in the pulse rate. The respiratory rate is rarely commensurate with the temperature-pulse curve. The temperature-pulse curve, particularly when associated with hiccough, sweating, and a sharp catchy cough, is often diagnostic of an inflammatory process around the liver or diaphragm. Dyspnea is occasionally observed; vomiting rather rarely unless there is some interference with the motility of the stomach. There is usually a leukocytosis, and the average range is around seventeen thousand with a corresponding increase in the polymorphonuclear elements. When the patient is further studied from a physical standpoint, other constitutional signs of sepsis manifest themselves. There is usually emaciation with progressive loss of weight. Percussion may be dull at the base of the lung on the affected side, and this dulness may extend as high as the fourth rib anteriorly; the normal excursion of the diaphragm is usually not obtained. Fremitus will be decreased and breath sounds diminished or tubular in type particularly if there is a large accumulation of pus with a subsequent compression of the lung base. Pleural friction sounds and rales are commonly heard, and if the abscess cavity contains gas, there may be dulness above, hyperresonance over, and dulness below this cavity. There may even be a succussion splash upon moving the patient, and metallic tinkles are often demonstrable. The abdominal thoracic movement is limited on the affected side, and there is usually tenderness in the intercostal spaces, the hypochondrium, or epigastrium. The tenderness in the upper abdomen is perhaps a little more outstanding when the abscess is placed anteriorly and on the left side. The stomach may be pushed downward if the abscess is on the left side, and the liver may be pushed downward if the abscess is on the right. This, however, is not always true because the liver is often fixed by adhesions in its normal position and occasionally from nature's attempt to prevent the infection from invading the general peritoneal cavity, the omentum may push the liver upward and adhesions may fix it in its altered position.

An adequate roentgen study and the proper interpretation of the evidence thereof is perhaps the greatest single aid in arriving at a diagnosis. This study should not consist merely of a flat plate taken in recumbency; both roentgenoscopic and roentgenographic examinations must be made if one hopes to obtain all the evidence available. Roentgenographic examinations must consist of both antero-posterior and lateral views. Roentgenoscopic examination is greatly facilitated by means of a tilt fluoroscopic table. The fluoroscopic examination gives information regarding the position in which roentgenograms are to be made. The mobility or immobility of the diaphragm may be observed, and when the abscess contains gas, a fluid wave may be seen upon shaking the patient. Roentgenograms made in the antero-posterior position show merely that the abscess is on the right or left side, while roentgenograms made in the lateral position will often show in which subphrenic space it is located. This information is of great value to the surgeon in determining the

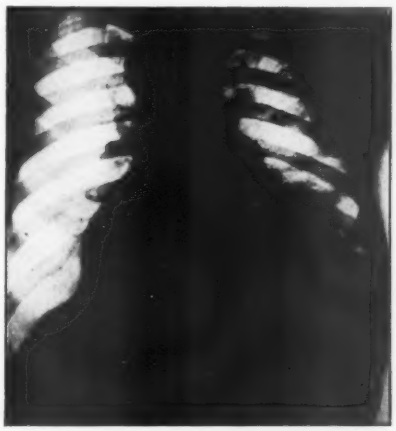

Fig. 1.—Diaphragm fixed, elevated, abnormally arched and accompanied by a secondary pneumonitis. This followed a perforated duodenal ulcer. At operation, the acute subphrenic infection had subsided and there were dense adhesions between the liver and diaphragm. These are the same roentgen findings as those seen when acute abscess is present. (Surgical Service of Howe and Jones, Dixie Hospital.)

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most direct method of operative approach. Furthermore, by X-ray and fluoroscopic examinations the lung may be found to be pushed upward, the diaphragm elevated, abnormally arched, irregular and fixed in its position, though a moderate excursion does not rule out the possibility of a subphrenic abscess.

Fig. 2.—Right lung pushed upward. Right diaphragm elevated and irregular in contour. Right subphrenic abscess following appendicitis, acute, with perforation. (Surgical Service of Trout and Jones; Jefferson Hospital.)

The costo-phrenic angle is often obliterated, and this obliteration or density is due to a secondary pleuritis or pneumonitis with some accumulation of fluid. In complicated cases of long standing, fluid may be found, also, above the diaphragm, and in these cases the roentgen

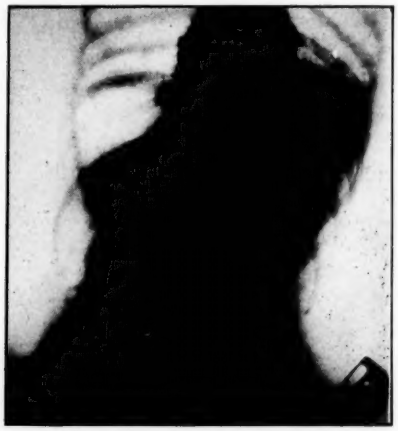

Fig. 3.—Fluoroscopy revealed a fixed right diaphragm. X-ray shows right diaphragm elevated, ragged in contour, and abnormally arched. Costo-phrenic angle more acute than normal. Secondary pleuritis and pneumonitis. Gas bubble beneath right diaphragm. This followed generalized peritonitis of unknown etiology. (Surgical Service of Trout and Jones; Jefferson Hospital.)

diagnosis is extremely difficult or even impossible unless gas is contained in the abscess below the diaphragm.

The vertical liver density is increased in the X-ray. According to McNamee, when the abscess occurs on the left side and contains gas and a fluid level, roentgenoscopic examination may reveal the fluid being agitated by each heart beat, forming a wave.

Failure to make some reference to the use of the exploratory needle would perhaps be out of order in a discussion of subphrenic abscess. Almost all authorities discuss its use with disapproval. Some even go so far as to say there is no more justification for needling a subphrenic abscess then there is for needling an appendiceal abscess. There are a few who still advocate the use of the curved needle devised by Clairmont. Almost all writers agree that needling should not be attempted until the patient is anesthetized and ready for operation. Its use is discouraged because of the danger of complications which may result from contamination of a virgin pleural or peritoneal cavity. Furthermore, the evidence derived therefrom, particularly when negative, is quite misleading, inasmuch as the pus when present so frequently escapes aspiration. Consequently, negative findings naturally lead the physician towards costly delay.

Diagnosis

In the diagnosis of subphrenic abscess, great weight must be placed upon the history of previous intraperitoneal infections. Associated with this history are added constitutional signs of sepsis, asthenia, anorexia, fever, leukocytosis, progressive loss of weight, and lower thoracic or upper abdominal pain which may be referred to the shoulder, scapula, or lumbar regions. In the early course of the disease there should be few signs referable to the chest. Late in the course of the disease, pulmonary or pleuritic manifestations are almost invariably present.

Aside from the history of previous intra-abdominal infection, an early, carefully planned, roentgen study with the proper interpretation of the evidence thereof offers the greatest single aid to diagnosis. The writings of Pancoast, Granger, Hodges, LeWald, O'Brien and McNamee have done much to clarify the problems confronting the roentgenologist. Early in the disease the signs consist merely of slight elevation of the

diaphragm and limitation of its excursion; hence, the importance of fluoroscopic studies. Later in the course of the disease, these signs become more pronounced and others are added; the diaphragm becomes abnormally arched and irregular in outline.

Fig. 4.—Fluoroscopy revealed limitation of excursion of right diaphragm. The X-ray shows both diaphragms high. This illustrates the difficulty of diagnosis in the presence of abdominal distention. The right diaphragm is irregular in contour. Operation revealed a right subphrenic abscess following pelvic peritonitis from specific salpingitis. (Surgical Service of Buxton and Sayre; Elizabeth Buxton Hospital.)

Cases of still longer standing show density or obliteration of the costo-phrenic angle and a secondary pleuritis or pneumonitis with the accumulation of a small amount of fluid.

Fig. 5.—Fluoroscopy revealed elevation and limitation of excursion of both diaphragms. X-ray shows irregularity and abnormal arching of both diaphragms. The costo-phrenic angles are obscured and there is a secondary pleuritis and pneumonitis particularly in the right lung. Operation revealed bilateral subphrenic abscesses following peritonitis resulting from acute specific salpingitis. (Surgical Service of Howe and Jones; Dixie Hospital.)

Fig. 6.—Picture of same patient as seen in Figure 5, except taken at a later date, and shows a large gas bubble beneath the right diaphragm. In neglected cases, there may even be a frank empyema.

Fig. 7. Left subphrenic abscess of long standing complicated by empyema. Diaphragm hidden by the presence of fluid above and below it. This occurred in a colored patient and resulted from a broad ligament abscess complicating childbirth. (Surgical Service of Buxton and Sayre; Elizabeth Buxton Hospital.)

Too much importance should not be attached to negative X-ray reports, particularly when an antero-posterior view alone is taken with the patient in recumbency. Such evidence is misleading to the surgeon, conducive to procrastination, contributory to a profound toxemia, and responsible in part for the present appalling mortality. When there is difficulty in making the diagnosis of a suspected subphrenic abscess, roentgen examination should be repeated frequently. If the clinical signs are characteristic and the diagnosis cannot be

satisfactorily established, it is far better to explore than to delay; for what does it profit the surgeon to postpone operation for mere accuracy in diagnosis while a profound toxemia develops and leaves him without a living patient to his credit?

Brown, of Cincinnati, has shown by roentgen study that the posterior attachment of the diaphragm is on a lower level than the anterior; and, furthermore, that the posterior half of the right diaphragm is on a lower level than the posterior half of the left. The most common location for subphrenic abscesses is the "right posterior superior space," and these may escape recognition entirely when viewed in the antero-posterior direction alone.

Aspiration, also, is equally as misleading, and this has been emphasized by Hirsch who reported a case in which twenty-three consecutive aspirations were attended with failure, but the twenty-fourth revealed the presence of pus beneath the diaphragm.

Subphrenic abscesses must be distinguished from pleurisy with effusion, hepatic, and perinephric abscesses.

In pleurisy with effusion, a history of previous pulmonary disease may be obtained. The temperature is usually not of the remittent type. Dyspnea and cyanosis are more marked. and the breath sounds cease more abruptly upon approaching the pathologic process. The level of the fluid varies with the position of the patient, and the heart is more frequently displaced; the diaphragm is low rather than high, and the area of dulness concave at the upper margin rather than convex. The X-ray may be of considerable diagnostic aid, and thoracentesis may readily reveal fluid above the diaphragm.

It is often difficult or even impossible to distinguish hepatic from subphrenic abscesses. A history of amebic dysentery may be elicited; the liver is enlarged rather than displaced, and there is more often jaundice. The kidney is more likely to be distorted, and the heart is more frequently displaced to the opposite side.

In perinephric abscesses, the etiology is usually different. The pain is often lower, and the tenderness more marked posteriorly. It may be distinguished by the urinary findings if the infection has reached the collecting tubules, or by the roentgen evidence if the margin of the lumbar muscle is obscured on the affected side, and the spine deviated away from the involved area or convex toward the well side.

Treatment

The treatment of infection in the subphrenic space may be divided into three stages:

1. Prophylactic.
2. Palliative.
3. Operative.

Prophylactic: The incidence of subphrenic abscess would perhaps be greatly diminished if more cases of intra-abdominal suppuration were treated conservatively. Fifeld and Love found in two hundred and twenty-eight cases of ruptured appendicitis treated conservatively that subphrenic abscess occurred in but one case; whereas, in eleven hundred and nine cases subjected to immediate operation, subphrenic abscesses occurred seven times. The early removal of drains is becoming more and more popular without the proper discrimination of those cases which most often result into the formation of subphrenic abscesses. If more careful attention were paid to the constant maintenance of Fowler's position postoperatively, there would be fewer subphrenic abscesses provided the infection had not reached the diaphragm prior to operation. The great trouble is that the patients are allowed to slip down in bed until the angle is not sufficiently elevated for practical purposes of drainage. Coffey has demonstrated that either flank holds more than the pelvis when the patient is lying on the back, and, furthermore, in order to drain the fluid from the flank into the pelvis, the body must be elevated to an angle of sixty or seventy degrees. Coughlin performed experiments on cadavers and found that when the body was placed in horizontal position fluid poured into the abdomen was deepest in the region of the eleventh and twelfth ribs. After the body was raised to an angle of forty degrees, fluid was still present in both loins.

Palliative: Not all cases of subphrenic infection progress to suppuration, and frequently the inflammatory process may be allayed and abscess formation prevented if proper treatment is instituted. In this group of cases Ochsner advocates immobilization of the affected side by means of adhesive plaster, the application of dry heat over the involved area, and symptomatic treatment of the toxemia.

Operative: Surgical treatment is indicated in those cases in which suppuration has oc-

curred. This is determined by added signs of sepsis, an increase in temperature of the remittent type, and a more marked tenderness over the affected side. The two chief avenues of surgical approach are the trans-abdominal and the trans-thoracic. The trans-thoracic may be trans-pleural or not. There are many styles and modifications of these general avenues of approach. No single method of approach is applicable to all the subphrenic spaces. It is generally agreed that the trans-abdominal approach either by a marginal or rectus incision is the procedure of choice if the abscess points or is located anteriorly; but a posterior or lateral incision is more desirable if the abscess is located in one of the posterior spaces. The mortality has been high after operative treatment for several reasons: 1. The diagnosis is usually made late in the disease after a profound toxemia is present. 2. Surgical approach to a subphrenic abscess offers technical difficulties which often result in contamination of an uninvolved portion of the peritoneal cavity or a virgin pleural cavity. 3. Proper drainage is often not instituted, and, even when adequately introduced, it is often removed too early. Too much dependence should not be placed upon cigarette drains. Elkin, of Atlanta, advocates the use of rubber tubes through which catheters are placed for irrigation. Walling off gauze is left in place for forty-eight hours, after which time hourly irrigations with saline solution or surgical solution of chlorinated soda are begun. The drains are removed at the end of a week and smaller, shorter ones substituted. He feels that the gradual shortening of drains rather than the early removal will obviate the danger of recurrence of the abscess and will insure healing and obliteration of the cavity at its deepest point.

Lockwood, writing from the Mayo Clinic in 1921, advocated an incision in the ninth, tenth or eleventh intercostal spaces. The skin is undermined, the intercostal muscles divided, and the parietal pleura with the diaphragm firmly adherent to it is separated from the rib above and from the rib below the incision. The interspace is now retracted and the cut edge of the muscle with the pleura is sutured to the diaphragm. The skin, also, is sutured to the diaphragm over the first layer of sutures so as to shut off completely the intermuscular and fascia plains. The diaphragm may then be incised immediately or at the end of twenty-four or thirty-six hours. (Figures 8, 9 and 10, courtesy of *Surgery, Gynecology and Obstetrics;* Lockwood.)

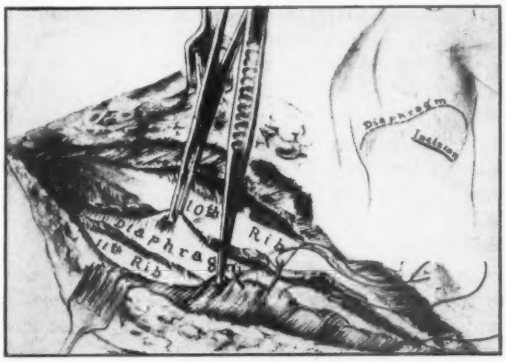

Fig. 8.—Incision in tenth interspace. Suturing muscles to the diaphragm.

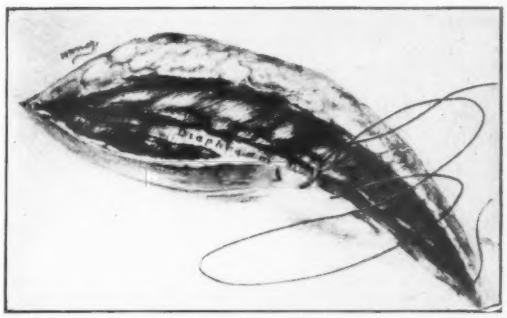

Fig. 9.—Suturing skin over cut muscle edge to the diaphragm.

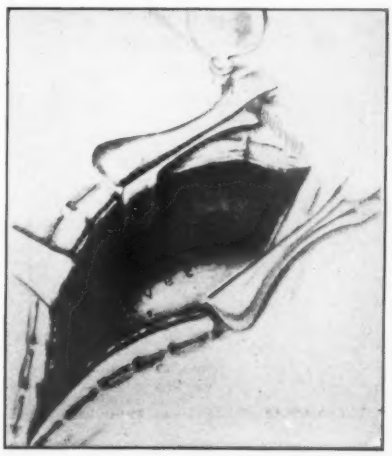

Fig. 10.—Retraction of diaphragm showing space between it and the liver.

Ochsner, of New Orleans, advocated in 1923 a retroperitoneal approach which consisted of a subperiosteal resection of the entire twelfth rib, a transverse incision of the musculature below the rib bed at the level of the first lumbar spinous process, followed by a retroperitoneal approach to the upper abdomen and lower thorax. By this approach, he was able to explore the pleural cavity, the subphrenic, subhepatic, the retrocecal and the retroperitoneal regions through a single incision, extension being made to accommodate the needs of the particular case. In nineteen cases of subphrenic abscess in which this procedure was used by Ochsner, there was but one death, a mortality of 5.2 per cent. In three of the nineteen cases, abscesses occurred concomitantly in the right posterior and the right anterior spaces. I know of no other author who has obtained such brilliant results. (Figures 11, 12, 13, 14 and 15, courtesy of *Surgery, Gynecology and Obstetrics;* Nather and Ochsner.)

Fig. 11.—Exposure of twelfth rib.

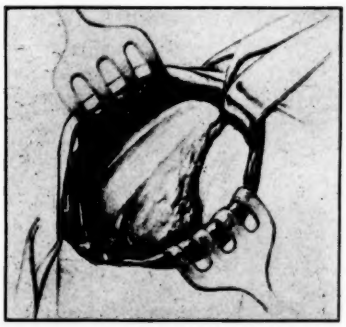

Fig. 12.—Bed of resected twelfth rib in upper part of wound. Incision through muscle running in a perpendicular direction. Lower muscle flap retracted and renal fascia in right lower corner.

Fig. 13.—Lower edge of diaphragm elevated by two sutures. The peritoneum has been separated from the under surface of the diaphragm. The curved perpendicular line on the plate is the right liver border, to the right of which lies the renal fascia through which the renal fat can be seen. Beneath the visible liver border is the point of election for the exploration of the subhepatic space. On the left between the diaphragm and its separated peritoneum is the point of election for the exploration of the suprahepatic space.

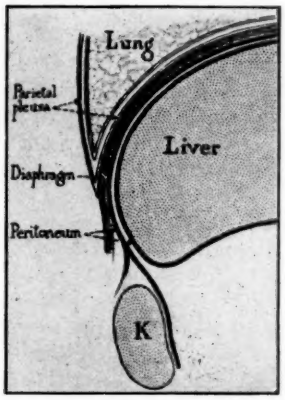

Fig. 14.—Schematic anterio-posterior section showing the normal relations of the right subphrenic region. The shaded portion above is liver and that below is the right kidney. The heavy black line represents the peritoneum.

In August, 1926, McEachern, of Manitoba, advocated closed drainage and irrigation by means of catheters introduced into the abscess cavity through a trocar, and especially recommended this procedure in the extremely ill, to be supplemented by a more radical drainage at a later date provided the patient's condition warranted it.

Writing in the *Annals of Surgery*, August, 1929, Russell, of New York, advocated the trans-abdominal approach, particularly recommending the anterior incision for diagnosis in selected cases, and sometimes drained abscesses of the posterior spaces by the abdominal route.

Clairmont has described an extra-peritoneal

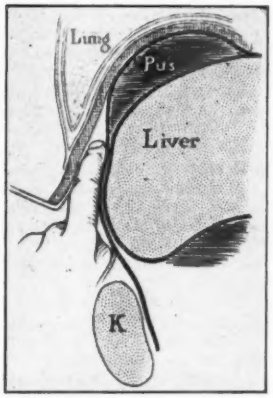

Fig. 15.—Schematic drawing showing the separation of the peritoneum from the under surface of the diaphragm as far as the abscess.

anterior approach for subphrenic abscesses pointing anteriorly, or those formed in the right or left anterior spaces. A marginal incision is made and deepened to the peritoneum. The peritoneum is then carefully separated from the anterior abdominal wall and from the under surface of the diaphragm until the inflammatory process is encountered. The abscess is then opened bluntly in a manner similar to those drained posteriorly. The peritoneal cavity is usually not contaminated because in most cases of subphrenic infection pointing anteriorly, adhesions have already formed between the abscess cavity and the parietal peritoneum, a concomitant facilitating drainage.

In the September issue of the *Annals of Surgery*, 1930, Elkin, of Atlanta, described a two-staged, trans-pleural operation in which portions of the eighth and ninth ribs were subperiosteally resected. In the first stage, the costophrenic angle was obliterated, and in the second stage the diaphragm was incised. (Figures 16 and 17, courtesy of *Annals of Surgery;* Elkin.)

Fig. 16.—First stage. Sutures have been passed through the diaphragm and pleura to obliterate a portion of the costophrenic angle. Sutures are left long to serve as guides at the second operation.

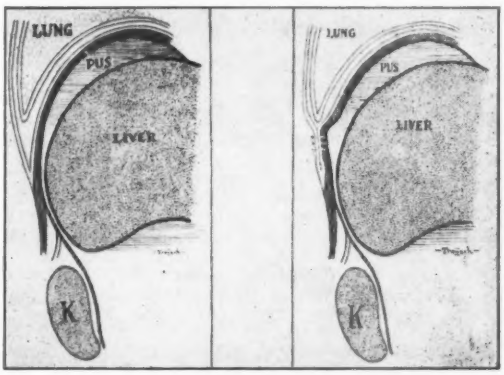

Fig. 17.—a. Position of pus in a high subphrenic abscess.
b. Costophrenic angle obliterated by sutures.

Conclusions

1. Subphrenic infection may be a complication of any suppurative process within the abdomen. Not all cases progress to abscess formation. The intra-abdominal lesions which most frequently give rise to it are: acute appendicitis, lesions of the stomach and duodenum, and affections of the biliary tract.

2. The rationale of treatment and ultimate prognosis are dependent upon the time element involved in making the diagnosis; hence, every effort should be made to arrive at an early one. This should not be difficult if one keeps in mind the history of a previous suppurative, intra-abdominal lesion, gives due consideration to persistent constitutional signs of sepsis, and invokes the early aid of a proper roentgen study.

3. No single method of surgical approach is applicable to all the divisions of the subphrenic space; hence, a knowledge of their boundaries and the proper localization of the abscess by lateral roentgenograms becomes of utmost importance.

4. Early surgical intervention is better practice than delay for mere accuracy in diagnosis. The most successful surgical approach consists of adequate drainage of the subphrenic space involved without contamination of the pleural cavity or an uninvolved portion of the peritoneal cavity. This is best ac-

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complished by retro-peritoneal or extra-peritoneal approaches whenever possible.

5. The present mortality of subphrenic abscesses is appalling, but it can be reduced by early diagnosis, by the proper localization, and by the proper appreciation and application of the surgical principles involved in the operative methods already devised.

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LARGE PROSTATE.

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Few diseases produce a more pitiable spectacle or result in a more horrible death than the effects of an enlarged prostate upon an old man. The dangers of the disease will continue to be the same: progressive pain, intolerable frequency of urination, retention of urine with infection and kidney breakdown. Loss of sleep, increased arterial tension, strain upon the heart and finally uraemia take the patient to his grave.

The dangers of the catheter will continue to be the same: traumatism and infection of the urethra and prostate, seminal vessels, epididymis and kidney, contribute to general sepsis.

The progress made in the management of these old men has reached the point now when it should scarcely be permissible to use the catheter more than a few times for temporary relief preliminary to operation.

The ability to relieve retention of urine three or four times a day constitutes no excuse for declining to advise operation with prostatic hypertrophy to be operated upon. The modern method of handling prostatics and removing the gland cures more than nine out of ten of the disease.

When prostatectomy was dangerous, the use of the catheter was justified. But we can now substantiate the claim that prostatectomy when the patient is not too nearly dead with urinary sepsis, can be performed with little danger, no pain, no gas nor ether anesthesia, and usually with two to five days' confinement in bed and two to three weeks in the hospital.

In 100 consecutive cases of all types of prostatic hypertrophy, with and without attendant disease resulting from urine retention, at least ninety will survive the operation, and the great majority of them will return to their natural habits with complete relief of symptoms.

Of the ten who die following operation, autopsy will show long standing dilatation and infection of the ureters and kidneys caused by delayed operation, and degeneration of the heart muscle with dilatation of the heart from constant straining efforts at urination—preventable by earlier operation.

The handling of these old men requires rigid individualization, thorough interest and sympathy, some skill and great gentleness in every act of every operative procedure. The first essential in their management is to realize that these old men must be permitted to do as nearly as possible exactly as they please. Their personal liberty should not be curtailed, and their habits should not be changed. They should be constantly encouraged to sit up and to walk about. Rigid confinement to bed and much interference with their habits will certainly result in danger. They should be humored, coddled, fed, watered, permitted to smoke, chew, and drink when they please. Such food as they are accustomed to have at home should as nearly as possible be supplied at the hours at which they are accustomed to taking it. They should be kept comfortable, but it is detrimental to irritate them with back-washing, bathing, and constant admonitions from over-educated nurses and doctors as to what they must and must not do. There are many important points to be borne in mind in dealing with the various types of the disease, and with various types of old men.

The great majority of cases of prostatic obstruction are those caused by adenoma of the lobes of the gland. These are large in size, usually accompanied by dilatation of the bladder and the gland is easily removable.

There is another type of moderate enlargement, of hard consistency, made up largely of fibrous tissue, accompanied by sclerosis at the neck of the bladder, thickening of and often contracted bladder.

The third type is carcinoma of the prostate. These, like the fibrous tissue glands, are hard, only slightly enlarged, and extremely tender. They are difficult to remove, and in my observation, have never been cured. They constitute approximately ten per cent of the cases of prostatic obstruction.

There is a fourth type, usually occurring in men in their fifties, characterized by moderate enlargement of the so-called middle lobe. In these cases the gland appears to be normal in

size, but the obstruction appears to result from the small tumor in the prostatic urethra at the neck of the bladder. This has been called the "ball valve" type of obstruction, though I have never seen any sign of valvular action.

The plan of action and the management of these old men with urinary retention has been about as follows: If they consult their doctor before they have retention of urine, suffering with frequency and straining, this is the ideal time to advise operation. The disease is in an early stage, there are few if any complicating factors, the operation is easily performed, the patients are out of bed in three days and home in less than two weeks.

If they consult their doctor for retention of urine, his duty is obviously to relieve the retention, possibly twice, and advise the patient to have the operation immediately. The situation is one of emergency.

When the patient is sent to the hospital, the surgeon should see to it that he is operated upon as soon as is reasonably possible after admission. The patient's general condition should be determined, he should be placed in a comfortable bed and prostatectomy performed as soon as the bladder refills with urine.

The time is past for routine multiple stage procedures for prostatectomy, and for catheterization either intermittently or by the indwelling catheter. It is rarely necessary to practice the old method of preliminary suprapubic cystotomy and later prostatectomy. Complete operation can usually be done at one stage, if it can with safety be done at all. If any patient is unable to stand prostatectomy, it means they have been permitted to go too long with the disease.

With the bladder filled with urine, a small dose of novocaine, 50 mgm., sometimes as little as 25 mgm., introduced into the lumbar portion of the spinal canal, will give perfect anesthesia, and little if any danger to life. A transverse incision is then made through the skin muscles and abdominal fascia, down to the bladder, which is then opened by a small puncture, the bladder emptied slowly of urine, the opening stretched and the interior of the bladder thoroughly examined for stone and other complications. Then with the index finger of one hand introduced into the prostatic urethra and the other into the rectum, the gland is enucleated by the method of Squier, starting in the roof of the prostatic urethra as far forward as the finger will reach and finding the line of cleavage between the gland and its connective tissue capsule. A slow enucleation of the nonmalignant gland can be accomplished without excessive trauma and with little bleeding.

After this is done, a careful examination of the bed from which it was removed is made, and a hot gauze pack snugly introduced into the prostatic bed and held in contact for a few minutes to check capillary oozing. Then the bed of the gland is inspected thoroughly for bleeding. Occasionally a visibly bleeding vessel may be tied or touched with the electric coagulation current.

Secondary hemorrhage, like secondary hemorrhage following tonsillectomy, is usually primary hemorrhage uncontrolled at the time of the operation. Under spinal anesthesia the blood pressure is low, and bleeding may be little; after recovery from the low blood pressure induced by the anesthesia, bleeding may start again.

There are many ways of preventing secondary hemorrhage. In my experience the best method is to pack the cavity left after removal of the gland with a single long piece of dry gauze placed exactly in the right spot under direct vision.

After packing the bed from which the gland was removed, a rubber tube is introduced into the bladder, and the bladder and surrounding tissue snugly closed around it. There are many cases in which the rubber tube might better be omitted. It will restrict the patient's movements in bed, it is sometimes painful, and, to many old men, extremely irritating. Such cases do better without the tube. In any case the tube may be removed at the end of two or three days, and the patient encouraged to sit up.

Very old men, sick or operated upon for any disease, should have special attention on the part of the nurses, and their dressings should be changed sufficiently often to keep them dry.

Frequently, upon going to see a patient after supper, on the day of the operation, I have found him irritable and anxious to sit up, and have immediately removed the tube, sat him up in a chair or stood him on his feet, and in five minutes found him quite pacified, happy, and ready to go to sleep.

It is the rule that within ten days after operation the patient is voiding urine by the

natural route and in another ten days the suprapubic wound has healed.

It is seldom necessary to irrigate the bladder. The patient should be urged to drink large quantities of fluid from the moment he comes under observation, and this serves much better as a means of irrigation to the bladder than by the use of irrigations from below.

It is rarely necessary to pass a sound or any other instrument into the urethra following operation to prevent stricture.

835 *West Grace Street.*

X-RAY THERAPY.*

J. T. McKINNEY, M. D., Roanoke, Va.

Ever since the epoch-making discovery of X-rays by William Conrad Roentgen, Professor of Physics at the University of Wurtzburg, Germany, December 26, 1896, the importance of X-ray work as an aid to the medical, surgical and dental professions, both from a diagnostic and therapeutic standpoint, has been constantly and steadily increasing.

In studying the development of modern X-ray generating apparatus one is struck by the tremendous changes which have taken place in this field during the past thirty-six years. The static machine was the first type of generating apparatus used. After a few years this was supplanted by the induction coil, which in turn was followed by transformers with mechanical rectification and stabilizers, and, lastly, the large transformers of today with valve tube rectification.

The X-ray tubes have played a vital part in this work. It is a far cry from the earliest tubes used by Roentgen, the old Crooke's tube, dating back to 1878, to the modern Coolidge, Westinghouse and Muller tubes.

Due to the marked improvement and standardization of X-ray machines and apparatus within the past decade, the entire subject of radio-therapy has been put upon a much more scientific basis. Accurate means of measuring dosages, with duplication of results, can now be accomplished.

The chart, taken in part from one prepared by N. S. Amstutz, 1931, Valparaiso, Indiana, illustrates the place of X-rays in the spectrum. It is interesting to note that not until 1912 were X-rays reflected and refracted and given their proper definition as light waves. X-rays are measured in Angstrom units, one unit being one ten millionth (1/10,000,000) of a millimeter.

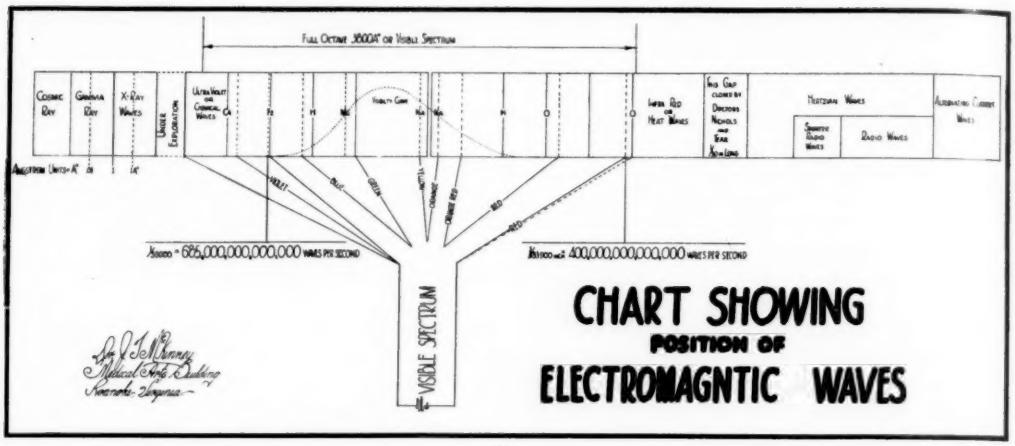
At first X-ray therapy was largely confined to the destructive effect of radiation on superficial malignancy. Later it was discovered that many inflammatory disorders of the skin were amenable to irradiation. The exceptional susceptibility of leukocytes, especially lymphocytes, and the remarkable resolving action of roentgen rays on lesions characterized by lymphocytic infiltration or hyperplasia were demonstrated and proven by continued investigation and study. With this information the scope of radio-therapy became broadened and excellent results were obtained in treating the leukemias, lymphoblastomas and hyperplasia of the thymus gland. The great value of X-ray therapy in the treatment of an enlarged thymus in infants can not be over-emphasized. While not every enlarged thymus is pathological, if the X-ray studies show enlargement and the infant is having any clinical symptoms of respiratory distress, with convulsions, cyanosis and crowing respiration, one or more X-ray treatments should be given.

On the basis of sensitiveness to radiation, tissues and structures may be classified in the order named: Sex glands (testicle and ovary), blood and blood forming organs (bone marrow, spleen, lymph nodes), thymus, skin, mucous membranes, fibrous and connective tissue, muscle, bone, and, lastly, nerve.

In the cell the physical and chemical processes of anabolism, katabolism, absorption, secretion and excretion are continually going on. Exposure to X-rays causes a breaking up of the bonds of molecular activity and may accelerate or retard all of the normal processes of the cell, depending upon the dosages used. X-ray quanta can break electrons away from the nuclei, and can also break the chemical bonds holding the atoms in molecular combinations and thus make possible new combinations, or change the velocity of any chemical reaction that may be taking place. Cells undergoing mitosis and young, rapidly growing cells are more radio-sensitive than mature cells, this being particularly true of cancerous cells.

In rapidly growing cancerous cells there is an irregularity in the cell division, arrangement, and in the character of the cell itself. Thus tissues which in the normal state are insensitive to radiation often acquire a high sensitivity when affected by pathological

*Read before the Roanoke Academy of Medicine, April 4, 1932.



changes and tumor growth. The more vascularized a growth is, the more susceptible it is to radiation, this is also true of tumors of embryonal origin.

Anemia diminishes sensitivity. Engorgement and inflammation increase sensitivity. The more cellular the structure of a tumor, the more sensitive; the greater preponderance of fibrous tissue, the less sensitivity. Cells which have a high secretory function are particularly sensitive to radiation.

The action of X-rays on the circulating blood consists of a primary leukocytosis lasting from a few hours to two or three days, followed by a steadily increasing leukopenia. The leukocytes are destroyed and replaced by connective tissue. In leukemia the great capacity of roentgen rays to destroy lymphocytes and to produce leukopenia is valuable. In the myelogenous form treatment is concentrated over the spleen and marrow of the long bones.

In the treatment of leukemias, dosages of moderate voltages should be used at first, reserving the higher voltages for later treatments. Great harm can be done by injudicious radiation. However, if properly applied, these cases can usually be made comfortable and returned to their daily mode of living and their lives prolonged for several years.

The specific action of roentgen rays on pathological cells in many skin diseases is used with good results. In a recent paper read before the American Medical Association meeting in New Orleans, Dr. George MacKee, the well known dermatologist of New York City, named a list of over eighty diseases of the skin in which he advocated roentgen ray therapy. Among this list we have found the following particularly amenable to X-ray therapy: acne vulgaris, eczema, lichen chronic, lupus vulgaris, pruritus ani, kraurosis vulvae, herpes, psoriasis, plantar warts, verrucae, actinomycosis, blastomycosis, erythema induratum, keloids, cutaneous callosities, ringworm of the scalp, beard, body and particularly of the fingers and toes when the nails have been destroyed, epidermophytosis and skin cancers, including the basal cell epithelioma. However, it is important to note that squamous cell epithelioma does not respond readily to X-ray therapy, and should be surgically excised. In all superficial therapy great care must be exercised to prevent telangiectasis and X-ray burns.

The analgesic effect of roentgen rays is well known in metastatic lesions of the bones and chronic arthritis of the spine. X-ray is useful in inguinal adenitis, tubercular adenitis and parotitis, and in the latter two conditions is the most approved method of treatment. Tubercular arthritis and chronic osteomyelitis are benefited. Formation of callus is stimulated in old ununited fractures by mild dosages. In the last few years, excellent results have been obtained in acute infections, more especially erysipelas, cellulitis, lymphangitis, carbuncles and furunculosis. Marked benefit has been obtained in treating the spasmodic stages of whooping cough in children, usually one or two treatments being sufficient to relieve the distressing symptoms.

Very recently congenital pylorospasm in in-

fants has been reported as relieved in many instances by X-ray treatment, and should be tried before an operation is advised.

In chronic mastitis accompanied by considerable enlargement and pain, good results have been acheived. Dr. Carter, of the Bigelow Clinic, Manitoba, has reported the largest series of cases successfully treated. Most excellent results have been obtained in treating many cases of toxic adenomata and exophthalmic goiter, and this field of roentgen-ray therapy offers many advantages.

Giant cell tumors of the bone, endothelioma, myeloma of the bone, osteogenetic and osteolytic sarcomas and many other bone lesions are showing good results with radiation therapy.

The specific action of the rays on the spermatogonial cells of the testis and follicular epithelium of the ovary has been utilized to relieve hemorrhagic conditions and fibromyoma of the uterus and teratoid tumors of the testis. The results obtained in the above type of cases justifies a more general application of X-ray therapy.

The deeper seated malignancies of the brain, neck, chest, mediastinum, abdomen, urinary tract, bladder and prostate, cervix and uterus, lympho-sarcoma, Hodgkin's disease and many other types of cancer, both primary and metastatic, should be treated with X-rays of high penetration ranging from 160,000 to 200,000 KV peak voltage or higher degrees of penetration. It is most important in all X-ray therapy to remember that the absorption of X-rays is just as important as the penetration. The regulation of dosages, the use of the proper filtration, and the repetition of treatments, bearing in mind the absorption curve, must be carefully studied by the radiologist and a method of treatment outlined for each case.

Many clinics advocate both pre-operative and post-operative roentgen-ray therapy for breast cancers. When it is impractical to give a course of X-ray therapy before operation, all cases of cancer of the breast should have the benefit of X-ray therapy following operation. Six areas should be treated—the right and left supra-clavicular regions, right and left mammary regions, and right and left axillary areas, with an occasional treatment through the post-clavicular area. We prefer the technique as used by Dr. DesJardins at the Mayo Clinic, using moderate voltage, 135,000 KV with six millimeters of aluminum filter. In the inoperable malignancies of the breast and metastatic recurrences, higher voltages up to 180,000 or 200,000 peak KV should be used.

The application of radium and X-ray therapy should be combined in a great many cases, this being particularly true in cancer of the cervix and bladder, the malignancies of the tongue, larynx, nasal passages, brain tumors, and numerous other parts of the body.

Although in a short paper we have only been able to mention a few of the commoner lesions treated, the judicious use of X-ray therapy has added a most valuable aid to our armamentarium in the treatment of a vast number of conditions and diseases.

Medical Arts Building.

INTUBATION—A SUPPLEMENTARY MEASURE IN THE TREATMENT OF LARYNGEAL STENOSIS DUE TO DIPHTHERIA AND OTHER CAUSES.*

CHAS. H. HENDERSON, M. D., Norton, Va.

History

As early as the beginning of the Christian era Hippocrates mentioned the introduction of sounds into the larynx for the relief of difficult breathing; however, it was not until 1858 that Bouchut devised a tube simulating our modern one which was made of silver and almost cylindrical in shape, which he introduced into the larynx by a sound and held by a silk thread for removal. Modifications of intubation of the larynx were reported by Chiari, Brown-Sequard and Bergman, and in 1885 Frank Waxham intubated a child sixteen months old. Joseph O'Dwyer, of New York, was the first to perfect the technic and instruments for satisfactory results, and those used in performing this operation today are the same as devised by him, with only slight modifications.

Indications

Obviously there is but one indication for intubation, and that is laryngeal stenosis, but since there are several pathological processes producing this condition, and several physical signs which go to make up the picture of laryngeal obstruction, it is well to consider here, the outstanding physical signs to be borne in mind when deciding whether or not instru-

*Read before the Wise County Medical Society at Norton, Va., February 17, 1932.

mentation is necessary. First of all, indications should be considered early in the disease, and intubation not used as a last resort. Every physician under whose care comes the treatment of diphtheria should familiarize himself with the cardinal signs of beginning laryngeal obstruction, the following being some of the most important:

1. Extreme restlessness with impeded respiration and beginning loss of voice.
2. Anxious expression; moist and clammy skin and dyspnea.
3. Retraction above and below the clavicles and of the diaphragmatic portion of the chest during inspiration.
4. And, lastly cyanosis.

In O'Dwyer's own words the indications for intubation are: "Marked by a more or less sinking in of the yielding portions of the chest, lower ribs and sternum, episternal notch and supraclavicular regions during inspiration. Recessions at the root of the neck are more significant than those below, as violent contractions of the diaphragm aid in drawing in the free border of the ribs and sternum. Abiding cyanosis is too late a symptom to wait for. Children sometimes remain long in one position when suffering severely from want of breath, and continued restlessness, if consciousness be unimpaired, is, therefore, an important indication that it is time to afford relief."

Technic of Operation

The operator has the choice of having the patient in one of two positions. He may be placed in a sitting posture in the lap of an assistant, or in the dorsal or horizontal position on a table with the head slightly elevated. Preferring the latter myself, it requiring the least amount of assistance, we will use this position for our illustration. First, the arms should be tightly bound to the thorax by what is known as the "mummy bandage," which is nothing more than a sheet wrapped tightly around the child. At least two assistants are necessary, one at the head of the table to keep the head stationary, and one on the left side to steady the shoulders. The instruments—consisting of the correct size tube threaded with about 18 inches of doubled heavy silk, intubator attached, mouth gag, tongue depressor and extubator—should be sterilized and placed on a table near by. The operator stands on the right side of the table, and, the mouth gag having been introduced well back on the molar teeth, he introduces the extended index finger of the left hand to the back of the tongue and on down until the epiglottis is felt, which is now pulled gently forward. The tube, by means of the intubator, is now introduced along side of the left index finger, vertically at first, along the surface of the tongue until the tip of the tube comes in contact with the left index finger as it rests on the arytenoids. Here the handle of the introducer should be turned abruptly upward, in order to bring the tube to a horizontal, or even beyond a horizontal position, as it enters the larynx. If the handle is not elevated at this point, the tube is apt to enter the esophagus instead of the larynx. The tube is now gently pressed down into the larynx and the introducer rapidly removed, the tube being held in place by the left index finger. After the guiding finger has been removed, having made sure that the tube is pressed well into place, if a successful intubation has been done, the above procedure will be followed by deeper respiration, a cough and a tubular metallic sound of the air rushing through, and almost immediately the anxious expression of the child is gone and practically normal breathing is restored. If the tube has entered the esophagus, no cough will be heard, and respiration either will be worse or unimproved. After we are reasonably sure that the tube is in the larynx and unobstructed, the thread may be removed, or pulled to the left side of the mouth and fastened to the cheek with adhesive. The tube is removed on the second, third or fourth day, depending on the individual case.

The technic of removing is similar to introduction. The extubator is passed into the lumen of the tube, the jaws spread apart and the tube gently pulled upward. It is wise to have a tube ready to be introduced again, should asphyxia follow extubation.

Comparison of Intubation and Tracheotomy

1. Intubation requires no anesthetic.
2. Leaves no scar.
3. There is less danger of post-operative pneumonia.
4. Requires less nursing care.
5. Summed up in one word, it is "safer."

Tracheotomy has preference over intubation only when:

1. Intubation tubes are not at hand.

2. When the laryngeal edema is widespread.

3. In cases where there is excessive membraneous exudate below the larynx.

Intubation is, however, not without danger, and in choosing the lesser of the two evils. we must consider some of the accidents that may ensue:

1. Some diphtheritic membrane may be forced ahead of the tube during intubation. Should this happen, the tube should immediately be removed and an attempt made to get the patient to cough up the membrane and the tube reintroduced.

2. Post-operative pneumonia, which is treated as pneumonia elsewhere.

3. Coughing up of tube. This may be due to the selection of too small a tube, in which case the next larger size should be used.

4. Ulceration of larynx due to pressure of a tube that is too large.

There are several other causes of stenosis of the larynx which might require intubation, and these will be mentioned in passing:

1. Cicatricial stenosis due to injury from syphilis and trauma.

2. Narrowing of the space, both above and below the vocal cords, due to inflammation.

3. For cure of granulation resulting from long continued use of tracheal cannulae.

4. In papillomata of the larynx.

5. Deformities of the larynx from disease or injury.

6. Ankylosis of the crico-arytenoid articulation.

Post-Operative Feeding

The Casselberry method is usually the method of choice, which is essentially as follows: The patient is placed on the back, the head being somewhat lower than the shoulders, and food is given slowly with a spoon or nursing bottle. Nasal feeding may have to be resorted to, but this is not the rule. Foods during the period tube is being worn consists of liquids and semi-solids.

Case Reports

Case 1.—B. D., white, male, age 4½ years. Taken sick September 30, 1931, and seen by family doctor next day, who gave him 10,000 units of diphtheria antitoxin same day, and 10,000 more the following morning.

On October 2nd, I was called in to see the boy by his family doctor about 2:00 P. M., the doctor informing me over the telephone he felt that a tracheotomy would be necessary. I took the necessary equipment to do a tracheotomy and also an intubation set. At the time I first saw the child he had all the signs of laryngeal stenosis, as previously stated. We intubated the boy with a size 4-5 year tube, and almost immediately he began to breathe better. We removed the tube October 4th, two days later. The recovery was uneventful.

Case 2.—E. B., white, male, age 2 years, referred to hospital by family doctor on November 9, 1931, with a diagnosis of laryngeal obstruction, due probably to a foreign body. The parents said the child had been unwell for several days, and gave an indefinite history of having swallowed a safety pin. On examination of the child's throat a definite grayish membrane was seen on both tonsils, more marked on the left side, which was very adherent. The child's temperature at that time was 101.6 F., and a diagnosis of diphtheria was made at the time. The laryngeal symptoms were, however, not then pronounced, but as the people lived some forty miles away, we decided to admit the child to the hospital for observation. He was isolated, and given 10,000 units of diphtheria antitoxin. About 10:00 P. M., he began to show more marked signs of laryngeal involvement and he was intubated at that time with a 2 year size tube. From this he obtained immediate relief, and slept very well through the night. The next morning his condition was fair, but about noon he seemed not to be doing so well, and a medical man was called in. He expressed the belief that the child's heart was weakening, and gave supportive treatment. General condition gradually became worse and the child died about 10:30 P. M., not, however, from laryngeal obstruction, but from toxic heart disease.

Case 3.—E. T., white, male, age 4 years. Father came to office on November 12, 1931, saying that his boy was "choking to death," and needed attention right away. Besides the intubation set, we took the instruments to do a tracheotomy to the patient's home. The family stated that the child had been sick for several days, but had become much worse the night before, and had been unable to get a doctor. The family doctor was at my office at the time the father came in, and he went along. The child showed marked laryngeal obstruction when first seen, and we attempted an intubation with a size 3 year tube, but were unable to get the tube into the larynx. This

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necessitated an emergency tracheotomy, which we did on the kitchen table, without any anesthetic, and inserted a No. 3 Jackson tube. The breathing immediately became better, and the parents were instructed in the usual nursing care of tracheotomy patients.

The patient was dressed every day, and an attempt was made on the fourth day to remove the tube, but, as soon as same was done, the breathing was so difficult that the tube was replaced. On the seventh day following operation, the No. 3 tube was replaced with a No. 2 size tube and family was instructed to hold a finger over the opening of the tube at frequent intervals in order that patient might become accustomed to breathing through the larynx again. The smaller tube was removed on November 21st, nine days from day of operation, and he returned to the office every other day for dressing, and was discharged as cured about a week from date of removal of tube.

Case 4.—L. W., white, female, age 4½ years. Taken sick January 26, 1932, but not seen by family doctor until January 29, 1932, at which time he made a diagnosis of diphtheria and gave the child 20,000 units of diphtheria antitoxin. I was called about 8:30 A. M., January 30, 1932, by the family doctor, who expressed the opinion that instrumentation would be necessary and desired that I see the case with him. We saw the case together about 10:30 that morning and decided that intubation was indicated. Using a size 4-5 year tube, we intubated the child. After introduction of the tube, the child's color and breathing became normal, and before we were ready to leave the house the baby was asleep. Extubation was done on February 2nd, three days later, and recovery was uneventful.

Case 5.—E. R., white, male. age 3½ years. Taken sick February 4, 1932, but not seen by family doctor until February 7th, three days later, at which time a diagnosis of diphtheria was made and 20,000 units of diphtheria antitoxin given. Seen again the next day by family doctor and given 20,000 more units of antitoxin.

I was called about 7:00 P. M., February 8, 1932, by family doctor, who stated he felt that if something more was not done for the child he would die. We saw the boy about 9:00 P. M., February 8, 1932, and decided an intubation was indicated. This we did at that time, using a 3 year size tube, which relieved the child of his dyspnea, and before leaving the home we gave him 10,000 more units of antitoxin, making 50,000 in all. The tube was removed about 11:00 A. M., February 11, 1932. The child seemed to be doing fine until 4:00 P. M. that day, when he developed more symptoms of obstruction, and the father brought him to the hospital. We intubated him again with the same size tube about 9:00 P. M., and admitted him to the hospital. He rested well that night, and up until about 11:00 A. M. the next day, when he coughed up the tube. He remained in good condition until 1:30 P. M. the same day, when signs of obstruction again appeared. At this time he was intubated again with a slightly larger tube and the respiration remained good. The child became very restless and uncomfortable, however, later on in the afternoon and that night I called in another throat man, also an internist, and they both agreed that the obstruction was sufficiently relieved, and advised an increase in the amount of sedatives. This was done, and the next day the general condition was somewhat improved. Condition gradually improved and tube was removed on February 13th, and the patient was allowed to return home two days later.

Conclusions

1. Intubation is an emergency operation and a life-saving procedure.

2. Intubation should have preference over tracheotomy, since it is quicker, less annoying, and safer for the patient.

3. Signs of laryngeal obstruction should constantly be kept in mind in all cases of diphtheria, and instrumentation performed early.

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800 *Park Avenue.*

"'TAINT"

'Taint what we have,
But what we give;
'Taint what we are,
But how we live;
'Taint what we do,
But how we do it—
That makes this life
Worth going through it.
—*Selected.*

GULL'S DISEASE, ADULT SPONTANEOUS MYXEDEMA, ACCOMPANIED BY SIGNS OF PLURIGLANDULAR ENDOCRINE INSUFFICIENCY (THYREO-GENITO-HYPOPHYSEO-SUPRARENAL SYNDROME). DISCUSSION OF DIFFERENTIAL DIAGNOSIS.*

LEWELLYS F. BARKER, M. D., Baltimore, Md.

When a patient presents symptoms referable to disturbances of the functions of more than one endocrine gland, the question often arises as to whether one has to deal with an affection that is primarily and predominantly monoglandular disease with secondary disorders of other glands, or with a disorder that is due to simultaneous involvement of several glands. The difficulties are well illustrated in the case here reported, the clinical history of which has been carefully summarized for me by the clinical clerk, Mr. Baptisti.

Clinical History

Daisy B., housewife, age 52, was admitted to the Osler Clinic (service of Prof. Longcope), on January 4, 1932, complaining of "great weakness, loss of weight, headaches, feeling cold, dizziness, and stomach trouble."

Previous History.—Except for childhood diseases, the patient was a healthy woman until the onset of the menopause (seven years ago), when, in addition to the cessation of the menstrual periods, she began to experience a variety of symptoms, including progressively increasing weakness, marked nervousness, and changes in weight (a gain at first to 148 pounds with subsequent progressive loss of weight). About three years ago there was some general swelling of the body and, on consulting a physician, she was told that she had Bright's disease and that her blood pressure was high. Under treatment, the character of which has not been learned, the swelling largely disappeared, though there have been recurrences of swollen eyelids, hands and legs. She has had right-sided headaches, occasional dizziness, pains in the upper abdomen, chronic constipation and hemorrhoids. She grew pale and sallow and the hair in her axillae fell out. For the past three months she has noticed central swelling of the abdomen on standing, or when rising from the recumbent to the sitting position. She gradually grew so thin and weak that she scarcely ever left the house, and recently has been lying down much of the time. All her teeth were extracted in the hope of improving her condition; two of them were quite loose. One month ago, she asserts that there was blood in her urine for four days. Two days before admission, she had a dizzy spell, in which she fell and hurt her ankle.

Physical Examination.—Height 63¾ inches; weight 108¼ pounds (23 pounds under calculated ideal weight); temperature 99.4°; respiratory rate 24; pulse rate 60; blood pressure 175 systolic, 90 diastolic, falling after a few days' rest to 155 systolic. Spontaneous movements few and slow; psyche dull and apathetic; speech slow; voice coarse and masculine (not so before menopause). Skin dry, rough, scaly; marked rugæ in forehead and neck; slight yellowish brown pigmentation; atrophy of subcutaneous fat except over backs of hands and feet. Nails of paper-shell type; brittle. Keeps herself warmly covered in bed.

Marked hypotrichosis (total loss of hairs in axillae and over trunk and extremities; crines sparse; hair of scalp retained except some loss at junction of neck and occiput).

Marked enophthalmos; narrow lid-slits (Fig. 1);

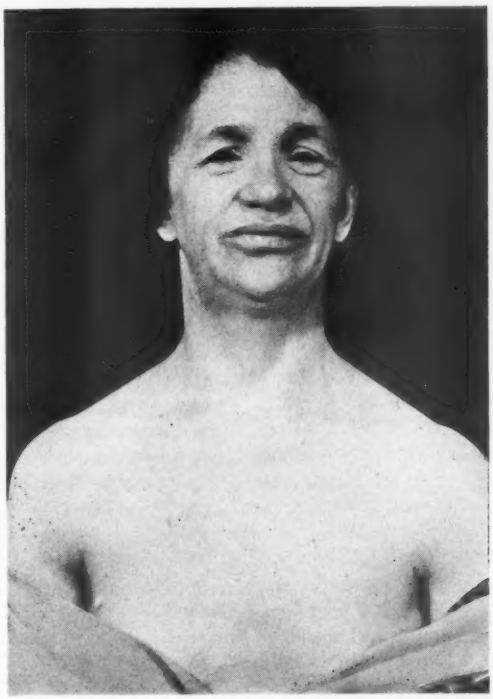

Fig. 1.—Anterior view of patient.

wrinkled eyelids; pupils react normally. Pallor of mucous membranes. Tongue very large. Moderate bilateral impairment of hearing. Thyroid not palpable. Chest negative except for slight enlargement of heart and accentuated aortic second sound. Peripheral arteries somewhat thickened; retinal arterioles constricted.

Marked diastasis of Mm. recti abdominis with bulging on sitting up. Abdomen otherwise negative except for palpable liver edge and slight tenderness in right upper quadrant. No ascites. Hemorrhoids present. Uterus small.

No paralyses; no objective disturbances of sensibility, though paraesthesia of hands and feet are complained of.

Deep reflexes normal; Babinski tests negative; abdominal reflexes not elicited; Chvostek +; Trousseau suggestive on right side.

Laboratory Tests.—*Blood:* R. B. C. 3,800,000; Hb. 75%; W. B. C. 5,000; differential count normal; WaR. 0; N. P. N. 31 mg. %; blood sugar 80 mg.%; blood calcium normal; NaCl 544 mg. %; blood cholesterol 600 mg. %; later 333 mg. %; total protein 6.56 gm. %; A/G ratio = 62/38.

*Clinical Lecture to the Senior Students of the Johns Hopkins Medical School, January 28, 1932.

Urine: No oliguria nor polyuria; trace of albumin; no casts; no blood.

Stomach Contents: Apparently achylia gastrica (test not satisfactory, to be repeated).

Feces: Negative.

Basal Metabolic Rate: Marked retardation; minus 50% (January 6th), minus 39% (January 9th), minus 40% (January 14th). All these tests were satisfactory, with pulse-rate of 48 to 52.

Glucose Tolerance Test: Slightly increased tolerance.

Insulin Tolerance Test: Within normal limits.

Electrocardiogram: Normal sinus rhythm. Sinus bradycardia. Very low voltage in all leads, so that P-waves are scarcely distinguishable; T-waves isoelectric.

X-Ray Examination.—*Chest:* Some areas of fibroid infiltration with calcification pointing to residuals of earlier tuberculous infection.

Tele.: M. R. 5 cm.; M. L. 9 cm.; aorta 5 cm.; T 26 cm.

Skull: Sella normal; small areas of osteoporosis in parietal region; no evidence of fracture of base of skull.

Discussion of Endocrine Findings

Thyroid.—In favor of the idea of *hypothyroidism* are (1) the very low basal metabolic rate and the bradycardia, (2) the dry, rough, scaly skin with pudgy hands and feet and brittle nails and with rugae in forehead, eyelids and neck, (2) the non-palpable thyroid, (4) the large tongue, (5) the slowed movement and thought, and (6) the history of marked swelling of the skin suggestive of myxedema. Though the patient was temporarily over-weight soon after the onset of the menopause, she is now twenty-three pounds below calculated ideal weight and there is marked loss of subcutaneous fat.

Parathyroids.—In favor of the idea of slight *hypoparathyroidism* are the definitely positive Chvostek sign and the suggestive Trousseau (to be tested regularly over a period); but the content of the blood in calcium is said to be normal.

Suprarenals.—In favor of the idea of *insufficiency of the suprarenal cortex (interrenal system)* are the profound asthenia, and the slight generalized yellowish-brown pigmentation of the skin. Against any marked insufficiency of the suprarenal medulla (and chromaffine system) is the existence of arterial hypertension.

Gonads.—In favor of the idea of *hypogenitalism* is the picture of eunuchoidism (small breast development, hypotrichosis, change in voice) that the patient exhibits. She has never had good breast development, a fact that suggests some lack of internal secretion of the ovaries in earlier life. But the other features of eunuchoidism have appeared only since the menopause and, of late, we have become sceptical of the existence (in women) of a *primary* late eunuchoidism due to gonadal insufficiency, since surgical removal of the ovaries after the menopause does not produce it. It seems now established that the two principal hormones that the ovaries manufacture are (1) *folliculin* (which is produced by the theca cells of the ovarian follicles and has, in animals, to do with putting them "in heat," causes the preliminary proliferation of the uterine mucosa before menstruation, and stimulates the development of the secondary sex-characters, including the breasts and other anti-masculine features), and (2) *progestin*, or *lutin* (which is produced by the granulosa cells of the corpora lutea and has to do with the pre-gravid transformation of the uterine mucosa and exerts a protective influence upon the early stages of pregnancy). But the manufacture of these two ovarian hormones seems to be stimulated by two of the hormones made by the anterior lobe of the hypophysis cerebri, namely, (1) anterior lobe hormone A, dominating the manufacture of folliculin and (2) anterior lobe hormone B, dominating the manufacture of progestin. Any excesses of hormones A and B are excreted in the urine as prolan A and B. The ovarian hormones, in turn, appear after their production to have some regulatory influence upon anterior lobe activity.

In normal conditions, as B. Zondek has shown, the menopause goes through three stages:—(1) a first stage in which large quantities of folliculin are produced (poly-folliculine or polyhormonal stage); (2) a second stage in which folliculin is no longer produced or only in small amounts (oligofolliculine stage), the stage in which appear the characteristic vasomotor phenomena (hot flushes, sweats, palpitation, feelings of oppression, air hunger, variable moods, irritability, etc.); and (3) a third stage in which the ovarian function practically disappears, folliculin is no longer demonstrable in the urine, the uterus atrophies, and the vasomotor phenomena of the menopause die down, but there is a marked production of anterior lobe hormone A and this is demonstrable in large quantities in the urine (polyprolan stage).

One strange feature in this patient is the persistence of the menopausal vasomotor symptoms for seven years! It will be of great

interest to determine, both qualitatively and quantitatively, her production of folliculin and of prolan A at this time, and Dr. Harrop is about to undertake this study.

Hypophysis Cerebri.—Is there evidence of *hypohypophysism (hypopituitarism)* in this patient? Certainly, previous to the menopause there were no symptoms to suggest it. And since the menopause, there has been no evidence of disturbance of the functions of the posterior lobe and pars intermedia, unless the arterial hypertension could be thought to point to excessive activity, which seems improbable. Moreover, there has been no marked polyuria nor oliguria suggestive either of diminished or of excessive production of pituitrin.

When we consider the functions of the anterior lobe of the hypophysis, however, it is time to pause. For the clinical picture has many features in common with those of anterior lobe deficiency of the type described as *hypophyseal cachexia* or *Simmonds' disease*. It will be recalled that in the latter syndrome, there gradually develops a severe cachexia with marked emaciation and loss of weight, characterized by disappearance of the subcutaneous fat and associated with pallor and wrinkling of the skin, anaemia, falling out of the hair and teeth, atrophy of the internal organs (splanchnomikria), regression of the secondary sex characters, profound asthenia, alterations in the psyche and marked retardation of the basal metabolic rate. There are so many co-incidences here with the clinical picture of the patient under description that the assumption of anterior lobe insufficiency has, to some of our internists, seemed plausible. Possibly, the quantitative determination of the anterior lobe hormones A and B (prolans in the blood-serum and in the urine) may corrobate this view. One cannot help but wonder whether the hypophyseal cachexia, if it should be proven to exist, could be wholly or in part responsible for a hormonal situation that is characterized by failure of disappearance of the vasomotor menopausal disturbance through the long period of seven years.

Possible Pathological-Anatomical Basis of the Polyglandular Deficiency

That there is deficiency of the function of a whole series of endocrine glands in this patient can scarcely be questioned. One must next ask the *nature* of the malady with which we are dealing. Have we to deal with a *primary outspoken involvement of one gland (thyroid; or hypophysis)* with secondary (functional) disturbance of the other glands; or are we confronted with a *pathalogical-anatomical process that has simultaneouly involved all the glands that seem now to be functionally deficient?* The term *pluriglandular insufficiency*, though correctly descriptive, might have any one of a series of pathological-anatomical maladies as its basis. Some of the possibilities may now be discussed. Among those that should be considered are (1) the predominantly monoglandular maladies (with secondary changes in other glands), including (a) Gull's disease, (b) Simmonds' disease, and (c) late eunuchoidism, and (2) pathological processes simultaneously affecting multiple glands of which the best known example is the sclerosis of the endocrine glands designated by Falta as *multiple Blutdrüsensklerose*.

That we might be dealing here with an ordinary case of *Gull's disease* (spontaneous myxedema of an adult) ought to be kept in mind as a possibility. Certainly, there is, and has been, myxedema, the thyroid gland is not palpable, there is enophthalmos with narrow lid-slits, the patient complains all the time of feeling cold, there have been characteristic trophic changes in the ectodermal structures (skin, nails, hair, teeth), the tongue is very large, the hearing is impaired, there is apathy with slowing of thought and speech, the voice is altered, there has been chronic constipation, there is early atherosclerosis with moderate arterial hypertension, there is marked bradycardia, the low voltage in the E K being like that met with in myxedema (B. Zondek; G. Cori), and, above all, there is profound retardation of the basal metabolic rate. The onset of the malady at the time of the menopause is often seen in spontaneous myxedema of adults. In some cases of myxedema there are secondary phenomena referable to the hypophysis, the parathyroids and the gonads. It will be very interesting, indeed, to see how many of the clinical symptoms in this patient disappear under the continued administration of thyroid extract.

The possibility of *Simmonds' disease* (hypophyseal cachexia), due to primary destructive lesion of the anterior lobe of the hypophysis cerebri, the symptoms of which have been mentioned above, has been considered, but the sella turcica looks normal in roentgenograms, typical myxedema and symptoms of suprarenal

insufficiency are foreign to the symptomatology of hypophyseal cachexia, and, furthermore, most cases of Simmonds' disease are preceded by some rather definite infectious process.

A *primary late eunuchoidism* can scarcely be assumed to exist and to account for the symptoms in this patient, for this malady occurs almost exclusively in males; the symptoms of so-called eunuchoidism here must, I think, be secondary rather than primary.

We ought not to decide without further studies that *sclerosis of multiple endocrine glands* (Falta's *multiple Blutdrüsensklerose*) is not present in this patient. The symptoms that point to concurrent involvement of the hypophysis, the thyroids, the gonads, the suprarenals and the parathyroids are certainly suggestive. Moreover, hypercholesterolaemia, hypoglycaemia, and achylia gastrica have all been observed in cases of Falta's disease. If, however, the patient should improve markedly under thyroid and hypophyseal therapy, the fact would be strongly against the diagnosis of Falta's disease.

This case affords manifold opportunity for further clinical, especially biochemical, studies, and for therapeutic research. Dr. Harrop tells me that these studies will be undertaken at once and, doubtless, a full report of the results of these will be published later on.*

*NOTE.—Two weeks after this clinic was held, Dr. George A. Harrop reported that the patient had been placed upon three grains of thyroid extract daily for one week, that her basal metabolism then showed far less retardation (minus 13% only), and that she had shown great improvement in all her subjective symptoms. He thought that these results, so quickly achieved, made it seem very probable that most of her malady may have been due to insufficiency of the thyroid.

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AGRANULOCYTOSIS WITH REPORT OF CASES.*

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Roberts and Kracke, of Atlanta, have presented a report of blood counts on 8,000 cases, and have proposed an interesting classification of the granulopenias to include a number of conditions having in common a diminution or absence of granulocytes from the blood, preceded by an inhibition, partial or complete, of myelocytic activity in the bone marrow.[1] No satisfactory explanation for the inhibition of the bone marrow has been offered, but if these varied conditions have anything in common from an etiological standpoint, a study of them from this angle will be most helpful.

Interesting factors brought out by Roberts and Kracke are that the life of the granulocyte is only four days, and that a patient cannot live longer than about seven days without them. The classification of these authors with case reports illustrating three types follows.

No conclusions are drawn from these cases, but they were thought worthy of report and of particular interest from the fact that each presented an absence of granulocytes.

THE GRANULOPENIAS

1. Acute granulopenia of unknown cause.
2. Chronic granulopenia of unknown cause.
3. Acute agranulosis with or without resulting sepsis.
4. Acute recurring agranulosis with or without resulting sepsis.
5. Chemical granulopenia due to chemical poisons, as benzol and arsenic.
6. Septic granulopenia, the result of general or localized septic processes.
7. Irradiation granulopenia, the result of exposure to roentgen and radium rays.
8. Anemic granulopenia, the condition accompanying certain splenic, aplastic, and pernicious anemias, acute aleukemic lymphatic leukemia, lymphatic leukemia and certain anemias with bizarre proportions of the lymphocytes and monocytes.
9. Infectious granulopenia, the condition accompanying certain acute diseases as typhoid, typhus, measles, mumps, malaria, influenza, dengue fever, and certain pneumonias.
10. The granulopenia of roseola infantilis, also called exanthem subitum.

Case 1.—Mrs. W., a rather stout woman, aged 44, with an unimportant family history, had been healthy all her life. On August 24, 1927, she complained of pain and aching in the epigastrium. Four or five days later she suddenly developed sore throat and fever. The next day she appeared quite toxic, the throat was intensely congested and the tonsils covered with a dirty gray membrane. The cervical glands were swollen. A throat culture was negative for diphtheria, but positive for Vincent's angina. Blood examination showed leukocytes 3,000, with 10 per cent polymorphonuclears. Ten thousand units of diphtheria antitoxin was given with no effect. The next day the patient was in a more toxic condition. A tenacious dirty membrane covered both tonsils, pillars, and hard palate. The cervical glands were more enlarged and tender. There was an icteric tint to the skin and the spleen was palpable. In addition to the sore throat the patient complained of pain over the tibias. The blood showed 2,000 leukocytes, with 2 per cent polys. The following day the patient was comatose and the leukocytes were below 1,000, with no polys present. Blood culture was sterile, and the patient died ten days after the onset of the disease. Neoarsphenamine was given intravenously without benefit. This case is rather typical of agranulocytic angina, which is the only condition in this group which has been prominent in the medical literature.

Case 2.—C. J., a well developed female, aged 3, was a full term healthy baby weighing eight pounds at birth. She developed normally and passed through measles uneventfully at the age of 2. January 1, 1932, her mother noticed that she was not gaining weight, and that she became pale and lost strength. A month later she developed sore throat which was diagnosed diphtheria and 50,000 units of antitoxin was given in forty-eight hours. The throat cleared up promptly, but she continued pale, the abdomen became distended, and she grew progressively weaker.

She was admitted to the hospital April 15, 1932. Physical examination showed an extremely weak and ill child. There was an intense pallor of the skin. Eyes, ears, nose, mouth, and throat were negative save for pallor of the mucus membranes and sordes. The

*Read before the Medical Association of the Valley of Virginia, at Harrisonburg, Va., May 26, 1932.

heart rate was rapid and the heart tones were soft and very faint. There were no murmurs or enlargements. The lungs were clear. The abdomen was markedly distended and a large slightly movable mass was felt extending from the costal margin to the level of the umbilicus. X-ray confirmed our impression of splenic tumor. The liver was felt 5 cm. below the costal border. A few hemorrhagic spots were seen on the legs, otherwise physical examination was negative. Urinalyses were negative. Blood count, April 15th, showed erythrocytes 1,810,000; hemoglobin 15 per cent; leukocytes 6,400, with 100 per cent small mononuclear lymphocytes, marked achromia, anisocytosis and poikilocytosis, and marked diminution of blood platelets. On April 17th, a transfusion of 250 c.c. of citrated blood was given. There was no reaction and no improvement. On April 19th, the count was—erythrocytes 1,780,000; hemoglobin 15 per cent; leukocytes 5,700, with 100 per cent small mononuclears. The temperature range was from 100.1 to 103.6 while in the hospital. The patient was sent home April 20th, and died two days later. No autopsy was permitted. Our diagnosis was aleukemic lymphatic leukemia. This case illustrated the anemic type, and one wonders if the large dose of antitoxin could have contributed to the bone marrow depression.

Case 3.—J. P., a boy, 19 years old, who had had the usual childhood diseases, was extremely ill in the summer of 1931 with a streptococcic sore throat, followed by streptococcic pneumonitis, empyema and a positive blood culture for the hemolytic streptococcus. In this illness no abnormal white cells were seen, the polys ranging from 70 to 86 per cent, along with the development of a mild secondary anemia. In the winter of 1931-32 he had chills on three occasions, followed by elevation of temperature for several days, but no blood examination was made. On March 28, 1932, he was admitted to the school infirmary on account of rectal pain. Proctoscopic examination showed a small rectal fissure and he was sent to the King's Daughters Hospital for dilatation of the sphincter. However, on admission to the hospital March 31st, he developed temperature of 100.4, sore throat, cough, and a chill, followed by sweating.

Physical examination showed the mucous membranes of the nose and throat intensely congested. There was no exudate. The lungs were clear. The heart rate was 96 and the respiration was 22. Examination was otherwise negative. The blood count showed leukocytes 4,000, with polys 36 per cent, small monos 58 per cent. The next day the temperature was normal in the morning, but rose to 102 with chills and sweats in the afternoon, and the blood count showed leukocytes 4,650, polys 6, small monos 89 per cent. The following day the temperature rose to 103.8. He had nose bleed and developed a rash over the buttocks and back, somewhat suggestive of pemphigus. The polys were 4 per cent. The following day his temperature was 103.2, he had a severe nose bleed, chills and sweats, and his condition did not seem so favorable; however, his poly count had risen to 30 per cent. The next day he appeared much better and steadily improved. His febrile period lasted six days, and the day after his temperature became normal his poly count was 39 per cent. A week later he was discharged apparently well and his polys had risen to 54 per cent. A count ten days later showed a poly count of 53 per cent.

Blood cultures and agglutination tests for the typhoid group, typhus, undulant fever, and tularemia were negative. Blood examinations for malaria were also negative. Culture from a pustule at the height of the skin rash yielded staphylococci. Urinalyses were negative save for a few red blood cells during the febrile period.

This case illustrates infectious granulopenia occurring in the course of an acute respiratory infection. It would be interesting to know if this patient had any granulopenia while a patient in the school infirmary, but no blood examination was made at the time. The question of recurrence also comes up in this case. One might also ask what effect, if any, his streptococcic infection eight months before had in the production of his granulopenia.

Summary.—Roberts and Kracke's classification of the granulopenias has been quoted and cases illustrative of three groups reported.

Conclusions.—No conclusions have been attempted, but the theory of Roberts and Kracke that a common factor is involved in this group has stimulated this report. The possible effect of a large dose of antitoxin in one case and of a streptococcic infection on another case is of speculative interest.

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THE COEXISTENCE OF ALEUKEMIA LEUKEMIA AND TUBERCULOUS ADENITIS.

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Eighty-six years ago Virchow identified the disease leukemia. Some years later he discovered that there were two types: splenic and lymphatic. Since then much knowledge has accumulated with regard to this disease, other types having been identified and various phases of the disease having been observed.

The etiology of leukemia has been ascribed to disorders of metabolism, toxic conditions, infections, etc., but authorities have as yet failed to reach a common agreement as to the underlying cause. MacCallum considers it a new growth of the blood forming organs. Ward, on the other hand, believes leukemia is due to a specific infection.

In a review of 256 cases of chronic lymphatic leukemia, Minot and Isaacs found that the rate of incidence of males to females was about 3 to 1. Young females showed a greater incidence than older ones. They also found that lymphatic leukemia most commonly occurred between the ages of 45 and 54, while chronic myelogenous leukemia occurred about ten years earlier. Acute leukemia, however, seems to have a predilection for women at the menopause.

Opie, in his experimental study of leukemia, found that leukemia and leukemic lymphoma could not be transmitted from one species to another, but he said there was evidence that leukemia of animals could be transferred to other animals of the same species. Leukemia of fowls, which is considered due to a filtrable virus, is easily transmitted to other fowls.

An aleukemic stage may occur in either the acute or the chronic form of lymphatic leukemia. Crawford and Weiss found that low white cell counts are common enough in the acute and subacute forms of leukemia but are not well known in untreated chronic cases. They concluded that since their case had not had X-ray or radium treatment he had always been aleukemic or was during the entire hospital observation.

A case of acute lymphatic leukemia, which showed a rapid change from a slightly increased total leukocyte count to a very high one following a cold of one week, was reported by Werner. In his patient the leukocyte count ranged from 9,000 to 248,000, with 76 per cent lymphoblasts, in seventeen days.

Gwyn cites a case in which the leukocyte count was normal in the beginning, high during several weeks, then normal shortly before death. In acute leukemia the low cell count may be due to exhaustion, as in the seriously ill patient.

Probably the lowest blood count on record in a case of aleukemic leukemia was that reported by White and Davey. In their patient the total leukocyte count was 1,100 with 84.4 per cent small lymphocytes.

The only reference to the coexistence of aleukemic leukemia and tuberculosis that the writer has seen is that of Fergenbaum. Fergenbaum, however, made no mention as to whether the tuberculosis was of a glandular or pulmonary type. It was his belief that the tuberculous process was an expression of lowered resistance in the patient.

D. L. Farley gives the following description of the appearance of the lymph nodes in lymphatic leukemia:

"The histological picture of chronic lymphatic leukemia (and aleukemic leukemia) is best seen in the lymph node. The architecture of the node is, as a rule, completely destroyed. The orderly arrangement of the germinal centers, cords, sinuses and fibrous septa is replaced by an unorganized hyperplasia of lymphatic cells. The uniformity of the cell type is striking and there is usually little variation in the size and appearance or intensity of the staining."

Pinkerton says: "Atypical conditions are frequently encountered that clinically and pathologically appear to be borderline cases showing various mixtures of the characteristics of acute infections, the purpuras, the anemias and the neoplasma of the blood. The term aleukemic leukemia is commonly applied to an ill-defined group of cases in which the blood picture during life shows severe anemia but does not justify the diagnosis of leukemia, while at autopsy, in addition to the leukemic-like cellularity of the bone marrow, accumulations of the myeloid or lymphoid cells are found in the viscera, these accumulations having a qualitative, but usually not a quantitative similarity to those true leukemias."

In some cases it is impossible to arrive at a correct diagnosis until the organs have been studied histologically at autopsy.

Report of Case

Female, age 75. When first seen by the writer in 1927, four years before death, she

complained of two lumps in the right side of her neck and loss of weight. These lumps were neither tender nor painful, and they had been noticed only two months. It was the patient's belief that there had been no increase in the size of these nodules since they were discovered. Examination April 1, 1927, revealed two enlarged lymphatic glands, the size of hazelnuts, in the right posterior cervical region just above the supraclavicular space. These glands were freely movable, discrete, not tender and unattached to the skin or underlying tissues. With the exception of a systolic blood pressure of 180 and diastolic of 95, moderate sclerosis of the arteries, chronic mastitis, right, and external hemorrhoids, the physical examination was negative. Urinalysis: albumin heavy trace, sugar negative. Microscopic examination showed hyaline casts, grade 2. Blood Wassermann negative. Blood picture, April 1, 1927; Hb. 75 per cent, R. B. C. 4,900,000, W. B. C. 6,000. A differential count showed small lymphocytes, 49 per cent; L. M. 2 per cent; neutrophiles, 49 per cent. On May 12, 1929, an examination showed no change in the size of the glands and the patient's condition appeared to be practically the same as it was two years previously. On June 9, 1930, she consulted the writer because of marked loss in weight and strength following an attack of "flu" a few weeks before. Her appetite had become very poor, the lumps in the right neck had enlarged considerably recently, and other similar nodules had appeared in the left neck. A blood count at this time showed Hb. 60 per cent, R. B. C. 3,560,000, W. B. C. 3,600, lymphocytes, 73 per cent, large mononuclears, 3 per cent and neutrophiles, 24 per cent.

Section of cervical lymphatic gland showing tuberculosis.

Three of these enlarged glands were removed from the right neck for diagnosis July 2, 1930. The sections showed tuberculous adenitis (see photomicrograph).

X-ray irradiation was then instituted, and it caused the remaining glands to decrease markedly in size. No irradiation of any kind had been given before the operation for removal of the glands was performed. Following removal of the glands for diagnosis there was a draining sinus at the site of operation for several months. At the end of six months, however, the wound was entirely healed.

In March, 1931, the patient reported that she was still weaker, had no appetite, and was still losing weight. Several new nodules had appeared in the neck and in the post-auricular region, some of which caused pain locally and along the course of the nerve which was being pressed upon. X-ray exposure caused these almost to disappear in forty-eight hours. In spite of treatment by irradiation and tonics, the patient showed very little improvement in her general condition. X-ray studies of the chest and gastro-intestinal tract at this time revealed no evidence of pathology. On account of the gradual downhill progress she was encouraged to consult members of a well-known clinic. Blood examinations there in May, 1931, showed 3,100 leucocytes, 85 per cent being lymphocytes and 15 per cent being neutrophiles. Only a few granulocytes were found, all of which were polynuclear cells. She was given repeated blood transfusions and tonics then but the disease rapidly progressed, terminating fatally in coma in June, 1931.

Conclusions

An aleukemic stage in lymphatic leukemia is not uncommon but its coexistence with tuberculous adenitis in a person seventy-five years of age seems worthy of attention. From the blood pictures and the clinical course it seems quite conclusive to the writer that the aleukemic leukemia was present in this patient during the four years of observation, although the rapid growth of the glandular masses a few months before death, with their sudden disappearance following irradiation, leads one

to believe that these were the first glandular manifestation of the leukemic condition.

The microscopic appearance of the gland shows every evidence of tuberculosis but the glandular masses which appeared suddenly when the marked prostration developed were undoubtedly not that of tuberculosis.

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THE CLINICAL LABORATORY AS AN AID IN THE DIAGNOSIS, TREATMENT AND PROGNOSIS OF DISEASE.*

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It is difficult to explain the unwillingness or apparent negligence of a great number of physicians to carry out carefully simple laboratory investigations. It is a fact that the laity, by its better instructions in medical matters, is becoming the best guardian and advocate of thorough clinical investigations. The statement that the blood has not been examined and the urine has not been tested is not an uncommon one to be made by the patient.

The main fact that impresses one, who with deliberation views the science of medicine as it stands today, is that it owes more to the man of pure science than to the so-called practical man. I do not wish to be considered for one moment as suggesting that the practical man is indispensable, for I realize that we cannot do without him; but his success is essentially dependent, in many respects, upon the man of science. He may perform many difficult operations successfully, but the laboratory worker has shown the cause of suppuration following operations and how it can best be prevented. One of the notable tendencies or rather inevitable results of the recent progress in internal medicine is the constantly increasing value assigned to laboratory methods as aids in diagnosis. They are so wantonly neglected. however, by a large number of physicians that the necessity for further emphasizing them and pointing out their practical applications in clinical medicine is quite apparent. Some one has said, and rightly too, that by experiment and science medicine is compelled to move forward and being firm in the belief that the laboratory will be the means by which medicine will continue to advance, I have chosen as the subject of this paper, "The Clinical Laboratory as an Aid in the Diagnosis, Treatment and Prognosis of Disease."

This question may be asked: What do you mean by the term "clinical laboratory?" A clinical laboratory is one in which chemical, physical and biological methods of diagnosis are practically applied to the study of disease. Its existence is largely dependent upon and closely associated with the laboratories of chemistry, physics, biology and pathology. Of itself, it may be a research laboratory in the pure science as well; but it is essentially a laboratory of applied science as it relates to medicine.

In the time of Hippocrates there were no clinical laboratories. In fact, our advancement in this branch of medical science dates back but a few years. But so familar have we become to the many new appliances now in use, that one almost forgets that there ever was a time when we did not possess them. A survey of the ancient medical writings will disclose the fact that the ancients not only examined the pulse and tongue of the patient, but the ejecta; consulted the stars; the flights of birds; noted any incidental occurrences during their visits, thus making diagnoses and prognoses from varying circumstances. Their methods of examination were very crude, depending upon the ordinary senses and unaided eye. With the invention of the microscope an entirely new field of medicine was opened up. By its aid Davaine, in 1863, discovered the bacillus of anthrax; Eberth, in 1880, discovered the bacillus of typhoid fever; in other

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words, the germ theory of disease was proven beyond question.

Later, with the discovery of the tubercle bacillus, another great step was made, as its presence in sputum proves positively the existence of tuberculosis, and it may be found before the physical signs are at all definite. An examination in this direction is now regarded as indicated in all cases in which there is the slightest suspicion as to the presence of tuberculosis. The physician who does not avail himself of this, the most important aid in the early recognition of tuberculosis, is guilty of a serious lapse in his obvious duty to his patient and to the public. We all know, or should know, that the absence of tubercle bacilli in a single specimen of suspected sputum does not exclude tuberculosis. Several examinations should always be made, at least ten on ten consecutive days, before a negative report is recorded. We should not lose sight of the fact that there are other types of bacteria to be found in sputum; therefore, we should examine the sputum for other organisms—the most important ones being the pneumococcus, streptococcus and the spiral forms. The typing of the pneumococcus in pneumonia, which is not an aid to the diagnosis of pneumonia, but to know the type of the pneumococcus, is of some value in arranging treatment from the standpoint of serum therapy. This, no doubt, is of more theoretical than practical value. Quite as important as the search for tubercle bacillus in suspected cases of tuberculosis is the search for the organism of diphtheria in doubtful cases and in the absence of a clear clinical picture. No physician can hope to have enough of clinical experience to always differentiate diphtheria from non-diphtheritic anginas without the aid of the laboratory, nor can he always make a diagnosis of Vincent's angina without resorting to the laboratory for assistance. Physicians with the most clinical experience are usually the ones who call most on the laboratory for aid.

Of incalculable value, both from the standpoint of diagnosis and prognosis, is the relation existing between inflammatory disease and leukocytosis. Generally speaking, the increase in the number of leukocytes is here proportionate to the intensity of the local infectious reaction. Here is a child who becomes suddenly ill with ill-defined symptoms. Temperature is high; pulse accelerated; respiration increased, but often only in direct proportion to the height of the fever; physical examination negative. The first day passes, second, third, fourth, fifth and even a greater length of time may elapse before a diagnosis can be made. Holt tells us that in 40 per cent of all cases of infantile pneumonia the physical signs of the disease are greatly delayed and may not appear until the day of the crisis. In just such cases the value of blood examinations is at once apparent, as the existence of a well-marked leukocytosis will probably give the diagnosis, and I might say the prognosis as well for it is noteworthy that the absence of a leukocytosis in severe pneumonia will probably admit a fatal prognosis. You will, no doubt, recall that there are six principal types of leukocytes in the blood stream, viz., polymorphonuclear, large and small lymphocytes, eosinophile; basophile and the myelocyte. We further know that the myelocyte has its origin in the bone marrow and first appears as a cell with a single nucleus, being called the meta-myelocyte, the mature cell being the polymorphonuclear leukocyte. In acute infections we find the greater the infection the more stimulation of the bone marrow, and hence the greater number of these meta-myelocytes. We can easily recognize, therefore, that we have a patient who is acutely infected, because the blood count shows a great increase of the meta-myelocytes, progenators of the polymorphonuclear leukocytes, indicating that the patient has a bone marrow which is profoundly disturbed by the presence of an acute infection. We think a better plan to judge the degree of infection is by the total leukocyte count and the presence of these meta-myelocytes that are in the blood stream rather than by the leukocyte count and the presence of the polymorphonuclear leukocyte. In appendicitis the leukocyte count in conjunction with the differential count is one of the most important aides in the diagnosis and differential diagnosis of appendicitis. The question, therefore, may be asked, "In what diseases, then, can a general blood examination be of value in diagnosis?"

I shall mention a few of the more common diseases, viz., pernicious anemia; sickle cell anemia; secondary anemia where there is a marked reduction of the erythrocytes and hemoglobin in such conditions as malnutrition and chronic poisoning; chlorosis; agranulo-

cytic angina; polycythemia; leukemia (myelogenous and lymphatic); purpura hemorrhagia, and possibly Banti's disease.

Within a remarkably short space of time, the chemical analysis of blood—primarily because of the perfection of the colorimetric methods of Folin, of Harvard,—has won for itself a permanent place in clinical studies and investigations. This study is of particular value in the practice of internal medicine. Blood chemistry studies should be made in all cases of pre-operative bladder and prostatic conditions: in cases of chronic nephritis (interstitial and parenchymatous). The diagnosis as well as the prognosis of pregnancy can better be followed by determining the blood chemistry at mid-term. The use of blood sugar determinations to control the insulin dosage in the treatment of diabetes and diabetic coma is well known and, likewise, the termination of plasma chlorides as a guide to the diagnosis and treatment of large numbers of hypertension cases. Blood sugar determinations are of particular value in differentiating diabetes mellitus from renal glycosuria. The large insurance companies of America today are very much interested in this type of examination because they realize that renal glycosuria is not recognized as being true diabetes and the urine examination alone cannot make the differential diagnosis.

With the more skillful use of the microscope and the development of our knowledge of biochemistry the examination of urine means more than the mere determining the presence of sugar and albumin. To a certain extent, generally too limited, examination of urine is done by every physician worthy of name. The tools with which this is done constitute the nucleus, or shall I say the nucleolus, of the clinical laboratory. Many are the errors which are prevalent, such as excluding sugar because of somewhat low specific gravity, ignoring the fact that important modifications of albumin fail to respond to the ordinary tests and excluding Bright's disease because of the absence of albumin at the time of a single examination. The so-called renal function tests are of special value and are used extensively in determining the functional capacity of the kidneys as to their ability to concentrate various ingested products, and this should be determined in all cases of pre-operative prostatectomies in elderly men; in cases of nephritis; uremia; eclampsia; mercurial poisoning, etc.

In diseases of the gastro-intestinal tract laboratory methods are essential to a correct diagnosis. I do not mean to say that every patient with gastric symptoms should have a gastric analysis made, because there are many neurotic individuals who are always complaining of various forms of gasses, and the difficulty of obtaining relief by the usual domestic remedies. I would insist, however, upon the examination of the gastric contents of a patient who is 50 years old or older, who gives a history of loss of weight, acute onset of dyspeptic symptoms in which the conditions persist longer than three weeks. The only chance that your patient has with carcinoma of the stomach depends upon an early diagnosis, long before a tumor mass can be felt or loss of flesh has gone to a marked degree. It is a safe rule that in the majority of cases in which a complete chemical analysis has been made and reveals the absence of free hydrochloric acid and lactic acid in appreciable amount, maligancy is present.

There is much being written today about cancer, its early diagnosis, treatment and the results obtained. The clinical laboratory has much to offer in this socalled field of tissue pathology. Every physician should use every means that he can in making an early diagnosis of cancer. I have recently learned of four old men sentenced to a horrible and inevitable death because some one did not take time to excise a bit of tissue to determine whether or not the "sore" was cancerous. The bit of tissue might have been examined in a clinical laboratory at a small cost, diagnosis made, and the neoplastic tissue removed before metastasis occurred. This was not done, and now those four old men are hopeless, objects of ghastly ugliness, with foul smelling necrotic tissue where lips and cheeks should be, abhorred by their relatives and deserted by friends. The examination of the gastric contents is not confined primarily to the diagnosis of carcinoma of the stomach but when properly conducted, and the findings, properly interpreted, lends distinct aid to the diagnosis of other gastric conditions, such as acute and chronic gastritis; pernicious anemia; duodenal and gastric ulcers.

There are many other conditions in which the clinical laboratory offers much assistance

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in making a correct diagnosis. I shall take time to mention only a few of them; syphilis; urethritis (specific); typhoid and para-typhoid fever; meningitis (septic and tubercular); malaria; filiariasis; trichinosis; actinomycosis; malta fever; tuleremia; taeniasis; amoebiasis; ascariasis; sarcoma; lipoma; chrondroma and osteoma.

It is scarcely necessary to speak upon the importance of technique in relation to laboratory methods. The laboratory can be of no assistance whatsoever unless the methods are correctly conducted. Therefore, the laboratory diagnosis depends a great deal upon the training, skill, honesty, integrity and experience of the individuals concerned in this phase of medicine.

Of course, no one will be so absurd as to say or believe that the clinical laboratory, with all of its instruments of precision, can ever possibly replace the searching history and the general physical examination in the general diagnosis of disease, but none ought to be so indifferent to the interest of his patients as to allow any means for a correct diagnosis to go unused, especially one as valuable as the clinical laboratory. After all, the three most important things to consider in making any diagnosis is the evidence afforded by the clinical history, thorough physical examination, and the clinical laboratory.

Certainly the item of expense and that of the practicability must be considered always. but within reasonable limits, I believe the patient would much rather have two dollars or more added to his bill, even during this period of depression that we have been reading and hearing so much about within recent months, and the assurance that he has been examined and given the benefits of every advantage science can offer, than to have the smaller bill and receive only a desultory examination. No physician has a moral right to present any bill at all until his patient has been given the benefits of all these arms of medicine in arriving at a correct diagnosis.

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THE LOWER EXTREMITIES IN THE DIABETIC PATIENT.

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In the last two or three years there have been a diminishing number of diabetic patients presenting themselves for study for the first time who give the classical symptomatology of thirst, polyuria, excessive hunger, and loss of weight. In the pre-insulin days and early insulin period these symptoms were almost always the characteristic picture, while in recent years the diabetic patient presents himself complaining mainly of one or more of the complications of the disease. Of all the complications the one which seemed to be the most serious problem had complaints referable to the lower extremities.

It is generally conceded that when a diabetic patient requires a surgical operation, he faces a questionable future. Several years ago I reviewed[1] a small number of surgical conditions in our diabetic patients and noted that the mortality in the entire group was 18.7 per cent. In surgical conditions, excluding those involving the lower extremities, the mortality was 4.7 per cent a little higher than general surgical mortality, but in those diabetic cases where surgery was instituted for lower extremity complication alone, the mortality was 25.5 per cent.

Because of this apparent increase in the diabetic patient with complications involving the feet and lower extremities and the attending results, I reviewed 500 diabetic cases to determine—(1) the character of extremity complaints with an attempt at classification; (2) the percentage of amputations, (3) the percentage of associated arterial disease. These cases were reviewed without reference to age, sex, duration of disease or any other factors, being from an alphabetical index of our diabetic patients, from office, hospital, and consultation practice.

Statistical Findings

In the group there were seventy-nine, or

15.8 per cent, who had some visible lesion on the lower extremities, such as ulcers, gangrene, or infection. Sixty-three, or 12.6 per cent, presented clinically one or more vasomotor symptoms in the feet and legs, such as burning sensation, cramps, pain, tingling, numbness, or weakness (see Table I). One hundred and forty-two patients, or 28.4 per cent of the total number reviewed, showed evidence of lower extremity involvement.

TABLE I

	No.	*Per cent*
Ulcers	30	6 %
Gangrene	31	6.2%
Infection	18	3.6%
Vasco-motor symptoms (as pain, burning, cramps, tingling, numbness, weakness)	63	12.6%

In this series of 500 diabetic cases, one hundred, or 20 per cent, had clinical findings of arterial disease evidenced by direct examination of the vascular system, such as eye-ground studies, roentgen study of the blood vessels of the lower extremities, and palpation of superficial vessels, such as the radial and brachial arteries, and by such presumptive manifestations elicited by means of the determination of blood pressure, and urine, and kidney function tests. Of the one hundred and forty-two patients presenting lower extremity complaints, eighty-three, or 59.1 per cent, had clinical findings of vascular disease (see Table II). Now, of the one hundred diabetics in this series who had clinical evidence of arterial disease, 83 per cent had complaints referable to the lower extremities.

TABLE II

	No.	*Per cent of Total*
Ulcer	16	53.3%
Gangrene	23	74.1%
Infection	15	83.3%
Vasco-motor	29	46. %

It is an extremely significant factor to note from Table II that 74.1 per cent and 83.3 per cent, respectively, of those diabetics who had gangrene and infection of the lower extremities had arterial disease.

Mutilating operations, such as amputation, were done in twenty-six of the thirty cases of gangrene. Of the total number of cases studied, 5.1 per cent lost a portion of a limb.

DISCUSSION

Many factors, such as the degree of diabetes, age of the patient, the duration of the disease from its discovery, the sex, were purposely omitted from this review. Of the last six patients we have sent to the hospital for study and management, two had gangrene of the feet, one had a large black ulcer on the heel of one foot and a smaller ulcer on the other foot, one had an infected foot, one was in coma, and one had marked hypertension. Of the four cases with lower extremity complications, two necessitated amputation, one incision and drainage, and one local treatment. All four cases showed evidence of sclerotic disease of the blood vessels by roentgen ray study.

The outstanding feature of our present day diabetic seems to be a problem of vascular disease, particularly manifesting itself in some complication of the lower extremities. There may be several reasons for this apparent increase in vascular disease in the diabetic:

First, the general education of the known diabetic has now been so well completed that his care rests solely in his own hands, and therefore does not consult the physician as often as he should except in the extreme need. Another reason given is that the diabetics are now probably living longer and going into the usual age, when normally a certain amount of vascular change takes place. It has been pointed out, however, that the sclerotic changes are occurring at an earlier age than one would expect them. Albutt[2] has noted many instances of sclerotic changes in young persons, including children. In our small group no such findings were noted. Joslin[3] is firmly convinced that arteriosclerosis is secondary to the diabetes and that the duration of disease is important. He believes that the cholesterolaemia usually found in the diabetic is the factor bringing about the change in the blood vessels through a primary deposition of fat in the arterial wall, with subsequent artheromatous plaque formation. No specific accepted cause for the prevalence of sclerotic changes in the diabetic is known, but one must admit the unusual frequency of their association. Bowen,[4-5] after a roentgen ray study of the development of arteriosclerosis in diabetics over a period of several years, concluded that the development of severe vascular pathology requires several years of neglect of the diabetic condition.

From the above analysis it is evident that one of the main problems confronting the diabetic patient of today is the prevention of sclerotic vascular change in the lower extremities, as well as its management—once it has

developed,—together with the treatment of developed pathology played by the feet.

Prevention and Treatment of Lower Extremity Complication

Based upon the theory that arteriosclerosis is caused by the high fat content of the blood, especially cholesterol, low fat diets would be indicated. Many workers in the diabetic field are now using such, feeding high carbohydrate diets to the limit of tolerance with low fat content. Their use in prevention of the formation of sclerosis of the vessels has not been established long enough to report any decision. The question is sufficiently urgent to continue the application of the low fat diets until definite proof of their efficacy can be established.

All will agree, I am sure, neglect of the diabetic condition itself would hasten the production of arteriosclerosis or bring about such changes as to predispose to lower extremity pathology.

Trauma is undoubtedly the predisposing factor in the production of the visible lesions of the feet. The wearing of improperly fitted shoes, such as those which are too tight, narrow and short, must be avoided. Proper care in the management of the nails, corns, and calluses is to be exercised. In trimming the nails, always cut straight across the top and never into the corners. Avoid the cutting of corns and calluses. Our usual instructions to the diabetic in the presence of corns are to wear pads with a hole cut in the center so that there will be no direct pressure on such callus places, then soak the feet in warm water, and, by the means of a fine toilet pumice, file the hard crusts off gradually a little each night. The history too frequently elicited from the patients who present lesions on the feet is that such pathology was preceded by the cutting of corns or calluses with a razor blade, the point bleeding, and a short while thereafter becoming sore and infected.

A preventive measure, which seems trivial and yet which is so very important. is the general hygiene of the feet. Daily washing of the feet is essential, using soap and water and carefully drying afterwards with especial care to the area between the toes. To many patients. such a direction may appear ludicrous, but when one sees the ill results of uncleanliness about the feet, such admonishment is not in vain. Lanolin is used very frequently to keep the skin soft and free from dryness and scales.

Delay in having proper treatment for apparently slight and insignificant cuts, bruises, or other injuries frequently are paid for dearly by loss of limb or life. The diabetic patient must be instructed to consult his physician early in such instances. Immediate first aid attention to such abrasions should be given.

Certain measures are used as aids to circulation of the feet and legs which we have found to be of considerable benefit. Instituted prior to the onset of lower extremity symptomatology, they might prevent a certain number of conditions from occurring. In that group of diabetics who have symptoms, such as those noted as vasomotor, these measures are of considerable benefit in affording relief. Foot exercises, such as describing a circle a number of times in both directions several times a day, or raising the body on the toes are advised. Massage, foot baths of alternate warm and cold water, and Buerger's positional leg manoeuvers are instituted. Advice is given the patient in regard to the wearing of circular garters and the crossing of the leg, since these procedures might possibly inhibit circulation.

Summary

The problem of lower extremity conditions in the diabetic patient is a serious one. A brief review and discussion of the occurrence of this condition occurring in five hundred diabetics is submitted.

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TRIBROMETHYL ALCOHOL (AVERTIN) ANESTHESIA IN OBSTETRICS.*

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Avertin (tribromethyl alcohol) was first prepared by Willstatter and Duisberg,[1] in 1923, by the action of yeast on bromal. It is a white crystalline substance with a melting point of 79° to 80° C. and is soluble in water at 40° C. up to 3.5 per cent. It is marketed in the form of avertin fluid, which is a solution of avertin in amylene hydrate, 1 c.c. of the solution containing 1 gm. of avertin.

During the past few years this anesthetic has been widely used, chiefly as a basal anesthetic, and several clinical and experimental studies concerning it have appeared.

The drug is administered by rectum in the form of a 2.5 per cent solution, in distilled water, which has been heated to 40° C. It is important that this temperature is not exceeded as otherwise dibromacetaldehyde is formed, which has a marked irritating effect upon the rectal mucosa. For this reason the solution should be tested before the injection. A simple method of doing this is to add one or two drops of a 1 to 1,000 aqueous solution of Congo-red to about 5 c.c. of the prepared solution. If an orange red color developes it is safe for use. If the color becomes blue or violet the solution should be discarded, as it has been decomposed.

In the body avertin is detoxicated by its combination with glycuronic acid in the liver and is eliminated in that form by the kidneys (Endoh[2]). Straub[3] recovered 68 per cent in this combination from the urine during the first twenty-four hours and 13 per cent in the second twenty-four hours.

Avertin has very little effect upon the liver function as determined by the bromsulphalein test (Bruger *et al.*[4]), comparing favorably in this respect with amytal and ether. Histologic study of the liver and kidney tissue of dogs which had been anesthetized with 500 mg. of avertin per kilogram of body weight showed no evidence of necrosis being produced by it (Stander[5]).

Lendle[6] has found that the toxic dose by rectum for the various laboratory animals is 0.5 to 0.6 gm. per kilogram of body weight, and the anesthetic dose for these animals is 0.25 to 0.30 gm. per kilogram of body weight. This gives a therapeutic index of about 1.7. He also compared the relative toxicity of the drug with chloroform, ether and Gwathmey's ether-oil-morphine-magnesium sulphate anesthesia, and found that avertin was less toxic than any of these.

Its use in obstetrics has been limited. In an attempt to determine its value as an obstetrical anesthetic it was used in 100 cases of labor at the Jersey City Medical Center and the Margaret Hague Maternity Hospital. For comparison, 100 control cases were used, fifty of which were given morphine sulphate and hyoscine in moderate doses, and fifty were given no analgesia.

In this series a dose of 60 mg. per kilogram of body-weight was used. When necessary, this dose was repeated at three or four hour intervals, for three or four doses. Sixty-six patients were given one dose, twenty-eight were given two doses, four were given three doses, and two were given four doses. Labor was well established, with strong uterine contractions at three to five minute intervals, before the initial injection was given.

There were fifty-one primigravidae and forty-nine multigravidae. Ninety patients were in the first stage of labor, sixty-six early (with the cervix three fingers dilated or less), and twenty-four late (with the cervix dilated more than three fingers). Ten were in the early second stage.

The technic of administration was as follows: The patient was instructed to lie on her left side and the avertin solution was slowly injected into the rectum through a rectal tube, by gravity, during the interval between pains. The tube was passed beyond that portion of the bowel which was narrowed by the presenting part. Upon withdrawing the tube a towel was held firmly against the anus about five minutes, and the patient was instructed to breathe through her mouth, and not to bear down for one or two pains.

Effect on the Mother.—The patients became drowsy in four or five minutes and were usually sleeping in ten minutes. This rapid induction of unconsciousness was not attended by any excitation or unpleasantness. Respirations were slowed, but only slightly, and tended to be deeper. Uterine contractions usually con-

*From the Margaret Hague Maternity Hospital, Jersey City, N. J.

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tinued unchanged, but occasionally they were temporarily diminished. In four cases the pains ceased for fifteen or twenty minutes, then returned, gradually attaining their former intensity. The patients were aroused momentarily during contractions and often became restless. Eight patients showed marked restlessness, continually rolling and tossing about in bed and often crying out during pains. A second injection relieved this temporarily.

There occurred an initial fall of blood pressure of 10 to 15 mm., which gradually returned to normal in thirty minutes to an hour. The pulse rate was increased ten to fifteen a minute, but returned to normal as the anesthetic wore off. Otherwise the pulse was unchanged.

The maximum effect of the drug lasted about one hour and forty-five minutes. However, after this there was usually some drowsiness and relief of pain for another hour.

There was not noticed any prolongation of labor. The total duration averaged nineteen hours and thirty-three minutes for the primigravidae and ten hours and fourteen minutes for the multigravidae. The average duration of labor after the initial injection was five hours and twenty minutes for the primigravidae and two hours and thirty-six minutes for the multigravidae.

There was a spontaneous delivery in seventy-two cases, low forceps in twenty-two, midforceps in five, and Caesarean section in one. Table I exhibits the duration of labor and the operative incidence in this group as compared to the control group.

was responsible for a slight increase in the low forceps deliveries. All of the operative deliveries required supplementary anesthesia. This consisted of ether in three cases and novocaine intraspinally in twenty-three cases. Small whiffs of ether were given for the delivery of the head in twenty-two of the spontaneous deliveries.

No difference was noticed in the tonicity of the uterus after delivery, and there was no increase in uterine bleeding, except that in one case there was moderate postpartum hemorrhage due to poor tonicity.

The patients usually slept for a short while after delivery and awoke feeling well. The majority had only vague or no recollection of events after the injection. No patient in this series complained of rectal or colonic irritation, and no passage of mucus or blood was noted, nor were there any sequelae during the puerperium attributed to avertin.

An effort was made to determine whether or not this form of anesthesia produced kidney irritation. Catheterized specimens of urine were taken at delivery and on the third and seventh postpartum days. A comparison of the findings in the two series showed such similarity that no conclusions could be drawn.

Included in the avertin group were eight cases of pre-eclampsia, showing distinct renal disturbance. The progress of these patients was entirely satisfactory, without demonstrable irritation of the damaged kidneys. However, this group is too small to draw any conclusions as to the safety of avertin in the presence of kidney change.

TABLE I

DURATION OF LABOR AND OPERATIVE INCIDENCE IN THE AVERTIN AND CONTROL GROUPS

	AVERTIN		MORPHINE & HYOSCINE		NO ANALGESIA	
	Primi.	Multi.	Primi.	Multi.	Primi.	Multi.
Number of cases	51	49	40	10	25	25
Duration of Labor	19h.33m.	10h.14m.	21h.56m.	13h.54m.	20h.36m.	13h.
OPERATIVE DELIVERIES:						
1. LOW FORCEPS:						
a. elective	9(17.6%)	0	6(15%)	0	2(8%)	1(4%)
b. outlet arrest	12(23.5%)	1(2.04%)	8(20%)	0	6(24%)	0
2. MEDIAN FORCEPS	4(7.8%)	1(2.04%)	3(7.5%)	0	1(4%)	0
3. CESAREAN SECTION	1(1.9%)	0	0	0	2(8%)	0

Restlessness and lack of cooperation on the part of the patient often interfered with the smoothness of the delivery. This necessitated supplementary anesthesia in many cases, which

Effects on the Baby.—There was no change in quality of the foetal heart and only the normal variations in rate were noted during labor. Four babies were slow in breathing,

but responded readily to the usual methods of stimulation. Eight babies were cyanosed momentarily, but breathed instantly, and had good muscle tone. Their subsequent nursery course was normal. The condition of these babies compared favorably with that of the babies where the mothers were given no analgesia. Where the mothers were given morphine sulphate and hyoscine, seven babies were slow in breathing. They responded to treatment but not as readily as the babies of the two other groups.

Results.—The results in thirty-three cases were excellent. There was marked relief of pain and the patients had complete amnesia for the events of labor and delivery.

In thirty-seven cases the results were good. The patients experienced marked relief of pain, but remembered a few isolated facts about the labor or delivery.

In eighteen cases the results were fair, there being only slight amnesia and moderate relief of pain.

In twelve cases the results were poor. The patients experienced only slight pain relief and there was no amnesia.

Conclusions

1. Avertin is a satisfactory anesthesia for use during labor when used in a dose of 60 mg. per kilogram of body-weight. It is apparently safe to repeat this dose three or four times at three or four hour intervals.

2. Restlessness is the only undesirable effect produced. This occurs to a varying extent during uterine contraction in the majority of the cases.

3. The fact that it does not have a tendency to prolong labor is a distinct advantage.

4. Supplementary anesthesia is necessary during the termination of the second stage in about one-half of the cases.

5. Complete, or almost complete, amnesia and marked relief of pain can be obtained in the majority of the cases.

6. Avertin apparently has no untoward effect on the baby.

7. Apparently there is no untoward effect on the puerperium from the use of avertin.

8. Avertin, as judged by a very small number of cases only, in the dosage advised, has no appreciable damaging effect on the kidneys, even though these organs are the seat of some pathology before its employment.

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Buxton Clinic Building.

TRANSURETHRAL PARTIAL PROSTATECTOMY.*

LINWOOD D. KEYSER, M. D., F. A. C. S., Roanoke, Va.

The development of electrosurgery and its application, during the past five years, to transurethral prostatic resection has marked an epoch-making advance in American urology. It is estimated that 60 per cent of all men beyond fifty years of age suffer from some degree of prostatic obstruction. From 15 per cent to 35 per cent of these require some type of treatment such as massage, diathermy, the daily use of the catheter, or surgery. Furthermore, among those coming for relief of prostatic obstruction, from 15 per cent to 20 per cent are found to have prostatic cancer. Again, about 6 per cent of glands resected surgically as benign hypertrophic types are found upon histologic study to contain areas of malignancy.

Removal of the prostate by incisional surgery is, in its elemental features, known to every physician. Through years beset with many tragedies of hemmorrhage, renal decompensation, and sepsis, the mortality in better trained hands has been reduced constantly. Yet the old man who submits to any type of incisional prostatectomy, regardless of his fitness for operation, must undergo an ordeal which

*Based upon papers presented before the Roanoke Academy of Medicine, January 4, 1932, and the meeting of the Southwestern Virginia Medical Society at Bristol, March, 1932.

from his point of view is inconsistent with the pain, annoyance, economic loss, and general discomfort, which one to three months of hospitalization entails.

In passing we may briefly mention some of the pioneer efforts made to remove prostatic obstruction by the urethral route. For the most part these proved unsatisfactory and have become matters of urologic history. Guthrie in 1834 described a prostatic catheter which enclosed a blade. This blade could be projected from within the instrument and thus cut a median bar as the instrument was passed into the bladder. Mercier from 1844 to 1848 brought out a series of cutting instruments for incising bars. In 1874 Bottini endeavored to obviate the hemorrhage produced by Mercier's instruments by the use of a cautery blade which he used, instead of the knife, to make incisions. Then Chetwood devised the operation of exposing the bladder neck perineally and excising the obstructing bar with the galvanocautery.

Young in 1909 introduced the first practical punch instrument and successfully applied the device to the resection of median bars in a large number of cases. Hemorrhage was the chief cause of difficulty following Young's operation and this investigator attempted to correct the difficulty by applying a cautery to his punch in 1911. In 1920 Caulk introduced his cautery punch and in addition to the removal of median bars began to attack adenomatous hypertrophies of the lateral lobes. From year to year Caulk extended the scope of the operation and gradually brought the procedure to the dignity of a transurethral resection.

The introduction of the McCarthy panendoscope telescopic system and the advent of the electrical knife capable of cutting under water brought a new impetus to endoscopic prostatectomy. Collins adapted an electrical knife resector to the McCarthy endoscope. Kirwin first developed a rotary punch which resected tissue previously coagulaated by the introduction of a transfixing needle electrode. More recently he has devised a resector which utilizes the electric cutting current. Foley in 1928 presented an electrical cutting loop instrument for transurethral prostatectomy but this was never brought to a wide field of clinical application.

Stern in 1926 presented his resectoscope which consisted of a fenestrated lens urethroscope through which an electric cutting loop could be passed, thus excising under vision the tissue in its grasp. Davis further developed the instrument, improving the stability of the loops and applying both cutting and coagulating currents to the instrument. Furthermore, Davis has definitely demonstrated the applicability of the Stern-Davis resectoscope, having reported over 350 cases with no mortality attributable to the operation, and with immediate excellent results. In 1931 McCarthy presented a somewhat similar resector of the electrical loop knife type. Working with F. Wappler, McCarthy developed also a surgical electrical unit with which cutting and electrocoagulation may be carried out with the same current.

These electric cutting loop resectoscopes have enjoyed a merited popularity in their ever increasing application by urologists throughout the country during the past year. At least one of the instruments of this type should constitute a part of the armamentarium of the urologist who undertakes partial prostatectomy by the urethral route.

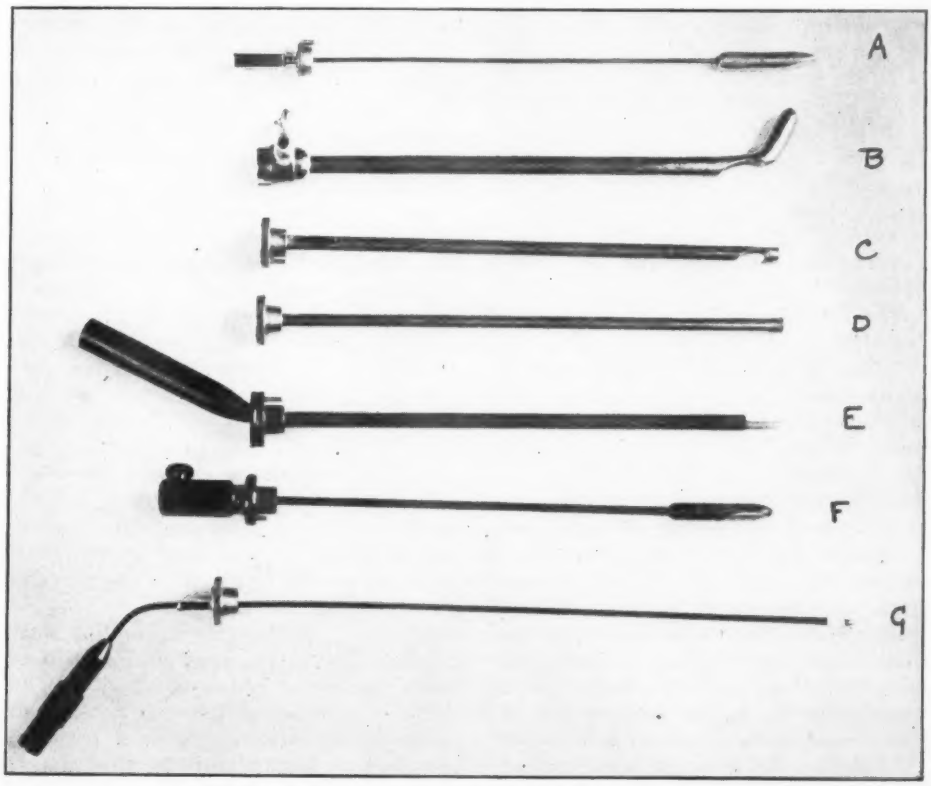
I wish to describe, however, a technique of transurethral partial prostatectomy which has been in use in some form at the Mayo Clinic since 1918 and which has during the past few years been brought to a high degree of combined efficiency and simplicity. Braasch in 1918 devised a median bar excisor which for the first time allowed the portion of the prostate to be removed to be visualized. Thus accidents such as cutting into the bladder wall, the trigone, or too deeply into the urethral floor could be avoided. Bumpus gradually extended the use of the instrument to the resection of adenomatous lateral lobe hypertrophies. At first he depended upon electro-coagulation of the prostatic bed with a Bugbee electrode for the control of hemostasis. With Tyvand, Bumpus has recently devised a multiple needle electrode which is plunged into the tissue to be cut. After momentary application of the electro-coagulating current, this electrode is removed and the ischemic tissue is cut through with a tubular knife.

The instrument which I use is shown in detail in the illustration. It has been slightly modified from the Braasch-Bumpus resector. The sheath and obturator are introduced into the bladder. Using the sheath as a Braasch cystoscope, the obstructing portion of the pros-

tate is visualized and the amount of tissue to be removed is estimated. One usually begins with the median lobe. The slot bearing tube is introduced into the sheath and the lobe definitely engaged in the slot, holding the in strument fixed with a moderate degree of force. The multiple needle electrode is then introduced and plunged into the tissue in the grasp of the slot. With a foot switch the electrocoagulating current is turned on for a few seconds.

The time of application of the current necessary to produce ischemia without excessive coagulation can be determined preoperatively in a few minutes by applying the electrode to a piece of raw beef under water. Upon removing the electrode the tubular knife (D) is quickly inserted and firmly plunged through the tissue. The slot-bearing tube and knife are then withdrawn bringing out the resected tissue. The window of the cystocope is replaced and the next area to be resected is brought into view. Any number of bites of tissue can thus be removed. When the operative removal of tissue has progressed to such a point that the operator can look through with unobstructed vision from the verumontanum to the trigone, the prostatic resection may be considered as completed. Residual bleeding is slight and no alarm need be felt if the terminal washing from the bladder is blood tinged. The prostatic bed should be finally reviewed, however, and any bleeding points coagulated either with the flat electrode (F) or the stiff Turner electrode applied under direct vision through a cut-off catheter guide (G).

The practicability of this technique has been proved by its application to a number of cases. Bumpus reports 250 cases operated upon from January, 1925, to January, 1932. Only nine of these subsequently required surgical prostatectomy. The multiple needle electrode which is a recent addition to the technique will probably enhance the application of the instrument to a wider field. While there are



Modified Braasch-Bumpus Prostatic Resector. A. Obturator. B. Sheath. C. Slot-bearing Tube. D. Tubular Knife. E. Multiple Needle Electrode F. Flat Electrode. G. Cut-off Catheter Guide with Stiff Electrode.

certain large vascular glands in which the electrical cutting loop instruments may be more applicable (and as emphasized above, one of these instruments should be at hand to attack more inaccessible areas of large intravesical and intraurethral lobes) this simple resector will prove preferable in the majority of instances, especially if the operator is familiar with the Braasch system of cystoscopy.

The advantages of the Braasch-Bumpus resector are numerous. First, no instrument gives a better picture of the obstructing portion of the prostate than does the Braasch cystoscope when drawn out into the prostatic urethra. Second, larger bites of tissue can be removed at each manipulation than with the electric loop instruments. With the Braasch-Bumpus instrument the average resection can be completed in fifteen to thirty minutes. Third, the instrument is less fragile than most resectors and less likely to complicating failures in the electrical system. There are no loops to burn out. Fourth, the high damped bipolar current from any standard diathermy machine may be used. The objection that the needle electrode must be applied without vision is not valid. The tissue to be cut is held under vision forcibly engaged in the slot of the instrument except for the few moments when the needle electrode is applied.

I have used the above technique in a number of cases with satisfaction. Seven patients were afflicted with a sclerotic collar type of contracted vesical neck, associated with long standing prostatis. Vesical tenesmus, urinary frequency, and dribbling were cardinal features. Their residual urine ran from zero to two ounces. The relief afforded these patients from the transurethral operation has been estimated as good to excellent. In carcinoma of the prostate I have twice removed enough obstructing tissue to afford good bladder drainage. Patients with lateral lobe hypertrophy frequently have been relieved of obstruction at one sitting. Several of these have been free from residual over a period of three years. One, with an espeecially large lateral lobe hypertrophy, still carries on his work as a minister, voids freely and has no residual. Another patient, 77 years of age, had a six to nine ounce residual, cardiac decompensation, and a large median and lateral lobe hypertrophy. After several weeks with the indwelling catheter, the median lobe and the inferior portions of both lateral lobes were resected and for two years there has been no return of his obstruction.

It is the general opinion from case reports that the immediate relief of patients treated by transurethral partial prostatectomy is excellent. Hospitalization after operation requires only a few days to a week, in the average instance. Occasionally there may be a prolonged febrile reaction from absorption from the electro-coagulated prostatic bed. This is more likely to occur in cases of long standing prostatitis than in cases of simple adenomatous hypertrophy without infection. Recurrences of obstruction so far have been infrequent and, as Bumpus and Davis both point out, are comparable to recurrences of obstruction after classical incisional prostatectomy. However, there are some urologists, like Lowsley, who sound a note of warning that transurethral techniques do not remove a sufficient portion of the adenomatous gland and that sooner or later recurrence is certain to occur in too frequent a number. Those advocating transurethral resections state that follow up statistics so far do not bear out this contention. Furthermore, they hold that recurrence is only an indication for a repetition of the endoscopic procedure. Time alone will evaluate the rationale of these counter-arguments. Certainly there is evidence enough to date that the patient suffering from prostatic hypertrophy will choose the transurethral operation, whenever it is applicable. Thus we may predict that the classical operation of suprapubic or perineal prostatectomy will be in the future an exceedingly infrequent procedure.

A few points are to be emphasized. Transurethral partial prostatic resection demands that the patient be prepared for operation in the same manner and with as much conscientious effort as for the incisional surgical procedure. The blood urea should not be over 45 mg. per 100 c.c., the 'phthalein excretion in two hours should be 40 per cent or better, the patient should be concentrating his urine, and his cardiac and general physical condition should be at the best level we can obtain. Forcing of fluids, the indwelling catheter, gradual decompression of the bladder and at times suprapubic cystostomy may be required. Bumpus advocates a course of massage and local treatment before operation in patients with prostatitis. Postoperatively the same principles that have reduced the mortality in incisional surgery must be strictly observed. Care

of the urethra and of potential hemorrhage or infection must be observed. Bumpus advocates the placing of a large calibered (26F to 30F) catheter in the urethra, and allowing it to remain forty-eight to seventy-two hours. Every effort should be made to keep the bladder from becoming over-distended as this will provoke bleeding. After the removal of the catheter the local treatment of the urethra varies with different urologists. Some apply no local treatment. Bumpus advocates daily irrigation of the bladder to wash out any sloughs as they may come away. If infection is excessive, continuous irrigation through a two way catheter may be applied. Delayed secondary bleeding is an occasional complication which is seldom alarming and may be controlled by the introduction of a large catheter or by fulguration of the bleeding point through an endoscope.

Finally, I believe the urologist who performs transurethral prostatic resection should be a trained cystoscopist, as well as a urologic surgeon. The matter of which instrument is preferred will vary with individuals according to the system of cystoscopy with which they are more familiar. My own feeling is that several types of resector should be at hand so that the method best suited to the individual case and the instrument which the operator thinks he can best apply may be utilized. Whatever technique be chosen, so long as it is satisfactorily carried out, transurethral partial prostatectomy for the relief of obstruction at the vesical neck promises to continue to be a boon to the elderly man who is afflicted with this disease.

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Correspondence

A Defense of the General Practitioner.

TO THE EDITOR:

A few weeks ago there appeared on the front page of one of the daily newspapers of this State an article giving extracts from an address by a well-known physician of New York, in which there was said that a large part of the increase in the cost of medical care comes from the failure of the general practitioner to treat more of the types of cases which come in his work and the tendency of the general practitioner to refer cases to hospitals and specialists when it is not necessary. In this article he leads the public to believe that a large part of the general practitioners are either incompetent or indolent. No doubt there are cases which are referred to hospitals and specialists when it is not necessary. Again, it is very necessary to refer certain cases to hospitals and to those who are specially qualified and equipped to treat them. The main point, however, is that the high cost of medical care comes mainly from the patient running to numerous general practitioners, hospitals, and specialists on his own account, without, and, in most cases against, the advice of the physician primarily in charge.

There has grown up in the minds of the public an idea that in most any illness with moderate duration or seriousness, the patient should be rushed off to somebody away from home. They believe that a strange physician or a distant hospital has some special power of magic or some special knowledge not possessed by others.

Only a few days ago a prominent official of Virginia had a statement on the front pages of the Richmond newspapers in which he said that the inmates of the various jails of the State were improperly taken care of. This article left the impression that the physicians were to blame. The article carried the suggestion that there be a supervisor over the physicians to establish a standard of professional care for the prisoners in the jails. I am sure the officials at the head of this movement did not intend any such reflection on the physicians of Virginia. There is no objection to the appointment of this Supervisor. I am sure the appointee will give his best service and, by bringing about a better co-operation

between the various local officials and employees, this service will be helpful. The objection is the news article which, by inference, puts most of the mounting costs of our jails and the lack of modern approved sanitary conditions upon the physicians. It places the general practitioner in a false light before the public. It even infers that the physicians available for looking after the prisoners in our jails cannot render a satisfactory service except under the eye of a supervisor.

These are but few of the evidences of the fact that the general practitioners of Virginia need someone to take up their cause through the press or some medium of publication. We wonder sometimes if the Journal of the Medical Society of Virginia could not place these facts before the physicians as they should be and from this Journal they could find their way into the daily press for the enlightenment of the public. We wonder if the President of the Medical Society of Virginia would not in the future place one member on the editorial staff who had the viewpoint of the general practitioner. The members of the Medical Society of Virginia are composed of, I daresay, eighty or ninety per cent general practitioners. They pay for most of the upkeep of the Society. Very few of the general practitioners are honorary members and do not have to pay dues.

To become a general practitioner a man has to take the same training and present the same qualifications as to practice any other branch of the profession. They are the main financial support of professional activities. The present tendency of the press and the public is to depreciate and discredit their work.

This condition of affairs is not brought about by men who are limiting their work to special subjects. These are men of the highest type. It is brought about mainly by people outside of the profession. A move for its correction should be brought about by the general practitioners themselves.

I believe at the next meeting of the State Society in Richmond there should be effected an organization of the general practitioners of Virginia. This organization should meet at the time of the meeting of the State Society. Such an organization should insist upon the highest standard of work by the general practioner and see that this work is placed in the proper light before the public and the profession.

E. L. Kendig, M. D.

Victoria, Virginia.
August 18, 1932.

Woman's Auxiliary, to the Medical Society of Va.

President—*Mrs. J. Allison Hodges*, 5511 Cary Street Road, Richmond.
President-Elect—*Mrs. W. P. McDowell*, Larchmont, Norfolk.
Secretary—*Mrs. James K. Hall*, 3011 Seminary Avenue, Richmond.
Treasurer—*Mrs. Reuben F. Simms*, 2034 Park Avenue, Richmond.

A Call to Service.

The tang in the morning air, the blue haze over the horizon, and the goldenrod and purple asters that bedeck the hillsides, tell us that the Autumn is fast approaching and that we must arouse ourselves from the Summer's lethargy and prepare for the Winter's work. The season will begin with the Convention held in Richmond November 1st to 3rd, at which time the new State Officers will be elected, and the new program for the Auxiliary for 1932-33 will be presented.

To do effective work, Virginia must be better organized, so we are working and praying for a large attendance. We believe if the doctors' wives could be made to realize the real help the Auxiliary could be to the profession, they would give it their hearty cooperation. Cicero said, "In nothing do men more nearly approach the Gods than in giving health to men." Virginia's department of Public Health, so ably begun by the late Dr. Ennion Williams, and so wisely carried on to greater usefulness by Dr. Draper, is recognized as one of the most efficient in the United States, and it is an honor and a privilege for our women to be asked to aid in "furthering the aims of the Medical Profession," in raising the standard of health in the State.

Many doctors' wives make the "hard times" an excuse for not doing their part.

We see, hear and read so much about the "*depression*," and the woes that beset us, that we lose sight of our many blessings. The year 1931 brought bountiful crops, the past winter was the mildest in generations, and as some-

one said, "We have a surplus of *everything* but *grace, grit, and gumption.*" What has become of our heritage of courage and fortitude handed down by our hardy pioneer ancestors, who conquered and settled this strange new world, "undaunted by savage people and terrifying unknown dangers"? Where is that determination to overcome obstacles, and *will to win* so characteristic of every true American? Have our moral and physical natures weakened and deteriorated through these years of ease and luxury? History proves in every crisis of this nation, whether wars, epidemics or economic problems, the women have risen to the occasion, and with "chins up," have striven to maintain the morale of the men, and to keep the home, church and school functioning. I believe that spirit still lives in their daughters, so I call upon the women of Virginia to aid in this "Crusade of Better Health." We wish our citizens to be 100 per cent efficient, not "just up and around." To have this we must carry on our program of education of the prospective mothers, and the examination of the pre-school children. This is a work in which every one in every Auxiliary can help.

We are very fortunate in having Mrs. Walter Jackson Freeman, the President of the Auxiliary of the A. M. A., to be our guest at the Convention, and I am sure her presence and enthusiasm will stimulate us to greater activity. So I urge all of the doctors' wives to come to Richmond and make this Convention the "biggest and best" in the history of our Auxiliary.

We will welcome any suggestions for the program or recommendations for the work. Please send at once to the president, as the program will be printed in full in the October VIRGINIA MEDICAL MONTHLY.

In the *Bulletin*, Mrs. Freeman commended the Georgia Auxiliary. She said, "Following the convention in New Orleans I attended the Georgia State meeting in Savannah. The regional health conferences, conducted by the Auxiliary and sponsored by the State Medical Society and State Board of Health, have been so successful that the House of Delegates passed a resolution recognizing the public health work of the Auxiliary as one of its *own* activities, to report to the House with other committees. I had the privilege of hearing the first report of the accomplished and far-seeing founder of these conferences, Mrs. J. Bonar White, of Atlanta, who was applauded to the echo, and how I wished the Doubting Thomases in other Medical Societies might have been present. The Georgia Medical Socitey knows a good thing when it sees it, and by using the Auxiliary to further its projects will practically double its own efficiency."

A new Auxiliary, that of the State of Washington, was admitted at the New Orleans Convention. The President, Mrs. H. J. Whitacre, of Tacoma, reported twelve counties organized with a membership of over four hundred. All of this accomplished in *one* year. Virginia will have to "speed up" if we are to keep pace with our progressive western states.

Sketch of Mrs. Freeman.

At the earnest request of the Press and Publicity Chairman of the National Auxiliary, permission is given to send you the following sketch of Mrs. Freeman:

Corinne Keen, is the daughter of the late William Williams Keen, M. D., of Philadelphia and Emma Corinna Borden, of Fall River, Mass. She is the ninth generation of Keens living on the banks of the Delaware, and on her mother's side lays claim to five Mayflower ancestors. She graduated at Vassar College in 1889 and was married on November 3, 1892, to Walter Jackson Freeman, of Philadelphia, later Professor of Laryngology in the Polyclinic, now the Graduate Medical School. She has five sons, all Yale graduates, two daughters, and eleven grandchildren. Two of her sons are physicians, Walter Jackson Freeman, Jr., of Washington, D. C., Professor of Neurology at St. Elizabeth's Hospital, and Norman Easton Freeman, research worker under Dr. Walter B. Cannon at the Harvard Medical School.

During the war, Mrs. Freeman worked in the Red Cross, and later was chairman of the South Philadelphia Woman's Liberty Loan Committee working in the Third, Fourth, and Victory Loans.

Following her husband's death in 1920, she was executive secretary of the Jefferson Alumni Society for the year of 1922, and inaugurated the Jefferson Alumni Fund. The years from March, 1923, to May, 1925, were spent in Europe for the education of her youngest children, and in January, 1926, she joined the newly organized Philadelphia Auxiliary. County secretary, vice-president, and president, state president, chairman of the

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Philadelphia convention committee, and national president-elect, she has served six years' apprenticeship and is now entering upon her Presidential duties with high hopes for the future of the Auxiliary.

The President's Visit.

The happy visit to Missouri last Spring, of Mrs. Walter Jackson Freeman, then the National President-Elect brought to mind forcibly, in that state, the pleasure and profit incident to such occasions. It is at the earnest request of Mrs. M. P. Overholser, National Press and Publicity Chairman, that Mrs. Willard Bartlett, of St. Louis, a National Director and a leader in national and state Auxiliary organization service, permits her reflections on this subject to be printed. They are as follows:

WHEN THE NATIONAL PRESIDENT CALLS ON US HOW SHALL WE UTILIZE HER VISIT?

An occasion that happily comes to many state and country auxiliaries is a visit from the National President or President-Elect, and with it the question, What shall we do for, and let us add, with her?

The following suggestions apply with adaptation to any special guest:

With true Auxiliary spirit of good will, the first thought frequently is of her entertainment and of a full social program.

Surely no one will be more appreciative of such efforts than she, and more anxious for an opportunity to meet personally every woman possible and to confer on general and specific problems. That is her primary interest.

May I add incidentally, recalling the words of the wise man, "Save me from my Friends, I can take care of my Enemies," let us not Kill her with Kindness. Here now is where we check up and ask, How can we make the most of her coming? If we see clearly, think straight and consider its broadest aspect, we will recognize in the President's visit an opportunity. First, for stimulating the prestige, thereby the growth and influence of the Auxiliary; and secondly, an occasion for furthering our public relations and interpreting the profession.

If she has chosen a time when the medical society is meeting, an auspicious date, then there is no better way to begin than by securing the gracious gesture and formal recognition of her office by an invitation for her to speak briefly before the Society.

It is taken for granted the press chairman has secured in advance a picture or at least an interesting and dignified announcement of her coming to the city, in the main body of the daily paper, rather than a note in the social column. The social side may well be included there. This press work is as much for the benefit of our own members and Medical Society as of the public. Of course, the President of the Medical Society will have been shown in advance the courtesy of a suitable notification. He is not a deviner of events. If we have done our part he will consider this an opportunity for the Medical Society.

As stimulating as was the recent visit of the President-Elect, Mrs. Walter Jackson Freeman, to the St. Louis Auxiliary, the most constructive service she rendered in her two days' visit was when presented to the Medical Society, bringing a greeting from her distinguished father, Dr. Wm. Williams Keen, the beloved teacher of many men present, and packing eight delightful minutes full of a glowing human picture of the Auxiliaries' place and work. So much for our first point.

Now for the second: Furthering public relations and interpreting the medical profession.

Let us plan to put the President in touch with outstanding socially minded leaders of our community in lines other than our own, while she is with us. Her coming might be worked into a splendid public relations day.

An illustration was the recent visit of our able National President, Mrs. Arthur B. McGlothlan, who came to St. Louis for the monthly luncheon of the Auxiliary on a day when the Medical Society does not meet.

However, an early morning conference had been arranged in advance with state officials of the Missouri Tuberculosis and Parent Teachers' Associations, at which plans for definite co-operation between them were consummated.

So let us give thought to making the most of national visitors.

Comments on Accepted Products

Cocomalt Used In Clinical Tests.

Important clinical tests with Cocomalt are being conducted all over the country. Whole groups of undernourished children show substantial gains in weight after taking this food-drink regularly. During the recent drought in Arkansas, for example, health officers fed Cocomalt to youngsters for forty days. At the end of that time, gains of from four to sixteen pounds were noted (depending largely on age). The average gain for the forty-day period was eight and one-half pounds—more than a pound a week. Children who missed the Cocomalt clinic or attended irregularly *showed no substantial gain.* Cocomalt is a delicious chocolate flavor food-drink that is almost twice as nourishing as plain milk, adding 110 extra calories to every glass. It contains 30 steenbock (300 ADMA) units of Vitamin D per ounce—the quantity recommended for one drink. Cocomalt is accepted by the American Medical Association Committee on Foods. Samples sent to physicians on request. Write to R. B. Davis Co., Hoboken, N. J.

Simplifying Summer Infant Feeding Problems.

Vacation travel presents fewer difficulties in caring for infants on S. M. A. Instead of using milk from dairies of unknown standards, the mother in feeding S. M. A. is using a food made from milk which her physician knows to be produced under strict sanitary requirements and rigorous inspection.

Refrigeration is unnecessary because individual feedings of powdered S. M. A. may be made up as needed. If the supply runs out, S. M. A. is available virtually everywhere in the United States in prescription pharmacies, from Skowhegan to Hollywood. S. M. A. is not a grocery product for adults, but a scientific antirachitic breast milk adaptation designed for infants.

S. M. A. is made to resemble nature's own formula, breast milk, as closely as modern scientific knowledge and laboratory control can accomplish—certainly closer than a trial and error formula.

Truth About Medicine

In addition to the articles enumerated in our letter of June 25th the following have been accepted:

Livermeal Corporation.
Liver Meal.

H. A. Metz Laboratories, Inc.
Triphal.
Ampules Triphal 0.025 Gm.
Ampules Triphal 0.1 Gm.

National Drug Co.
Scarlet Fever Streptococcus Toxin for the Dick Test.
Scarlet Fever Streptococcus Toxin for Immunization.
Scarlet Fever Streptococcus Antitoxin.

United States Standard Products Co.
Rabies Vaccine—U. S. S. P. (Semple Method), seven vial packages.
Rabies Vaccine—U. S. S. P. (Semple Method), twenty-one syringe packages.

NEW AND NONOFFICIAL REMEDIES

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Ampoule Sodium Amytal, 0.25 Gm. (3¾ grains).—Each ampule contains the stated amount of sodium amytal (New and Nonofficial Remedies, 1932, p. 91) and is accompanied by a 2.5 c.c. size ampule of distilled water. Eli Lilly & Co., Indianapolis.

Ampoule Sodium Amytal, 0.5 Gm. (7½ grains).—Each ampule contains the stated amount of sodium amytal (New and Nonofficial Remedies, 1932, p. 91) and is accompanied by a 5 c.c. size ampule of distilled water. Ely Lilly &o Co., Indianapolis.

Ampoule Sodium Amytal 1 Gm. (15½ grains).—Each ampule contains the stated amount of sodium amytal (New and Nonofficial Remedies, 1932, p. 91) and is accompanied by a 10 c.c. size ampule of distilled water. Eli Lilly & Co., Indianapolis.

Ampoules Luminal-Sodium (Powder) 5 grains.—Each ampule contains 5 grains of luminal-sodium (New and Nonofficial Remedies, 1932, p. 85). Winthrop Chemical Co., Inc., New York.

Capsules Luminal-Sodium 5 grains.—Each capsule contains 5 grains of luminal-sodium (New and Nonofficial Remedies, 1932, p. 85). Winthrop Chemical Co., Inc., New York.

Luminal-Sodium Tablets, ¼ grain.—Each tablet contains ¼ grain of luminal-sodium (New and Nonofficial Remedies, 1932, p. 85). Winthrop Chemical Co., Inc., New York.

Luminal-Sodium Tablets, ½ grain.—Each tablet contains ½ grain of luminal-sodium (New and Nonofficial Remedies, 1932, p. 85). Winthrop Chemical Co., Inc., New York.

Liver Extract No. 343, 110 Gm. Bottle.—Each bottle contains 110 Gms. of liver extract No. 343 (New and Nonofficial Remedies, 1932, p. 248). Eli Lily & Co., Indianapolis, Ind. (Jour. A. M. A., July 2, 1932, p. 33.)

Rabies Vaccine—U. S. S. P. (Semple Method).—This product (New and Nonofficial Remedies, 1932, p. 369) is also marketed in packages of seven vials, each containing one dose; and in packages of twenty-one syringes, each containing one dose. United States Standard Products Company, Woodworth, Wis.

Intracutaneous Tuberculin for the Mantoux Test.—This product (New and Nonofficial Remedies, 1932, p. 376) is marketed in packages of one 1 c.c. vial containing diluted tuberculin sufficient for ten tests. Each dose of 0.1 c c. represents 0.0001 Gm. of tuberculin. The Gilliland Laboratories, Marietta, Pa. (Jour. A. M. A., July 30, 1932, p. 389.)

FOODS

The following products have been accepted by the Committee on Foods of the American Medical Association for inclusion in Accepted Foods:

Savita (Battle Creek Food Company, Battle Creek, Mich.).—A viscous mixture of extracts of brewers' yeast and vegetables (parsley, leek, celery, onions and carrots), salt and saccharated iron oxide. Savita is claimed to have a meat-like flavor and to be especially intended for the preparation of broths, bouillons or gravy and to add flavor to many dishes. It is also claimed to be a rich source of vitamins B and G and of dietary iron.

SMACO (207) Powdered Half-Skimmed Milk (S. M. A. Corporation, Cleveland).—A powdered spray-dried half-skimmed milk hermetically sealed in an atmosphere of nitrogen. This product is claimed to be intended especially for infant feeding for use wherever a partially skimmed milk is indicated.

PROPAGANDA FOR REFORM

Nirvanol.—The Council on Pharmacy and Chemistry reports that Nirvanol (distributed by the Heyden Chemical Co., New York) is stated to be phenylethylhydantoin and that, while it is supplied on request, no propaganda for it is being made by the distributor. At the present time Nirvanol is proposed primarily for the treatment of chorea. From a review of the literature the following conclusions appear justified: (1) That a fairly large percentage of patients suffering from chorea are relieved by Nirvanol; (2) that there is no evidence that the relief of chorea by Norvanol lessens the tendency to subsequent cardiac disease; (3) that there is no invariable relationship between the appearance of the various symptoms and the therapeutic effects; (4) that a specific hypersensitiveness to Nirvanol has not been proved; (5) that the side actions are always disagreeable, sometimes alarming, and often positively dangerous, if not even fatal; (6) that the treatment is too severe to justify its use except in those cases that do not yield readily to other treatment; (7) that Nirvanol should not be used in the treatment of chorea except in an institution where the patient is under close supervision. The Council concluded that the treatment of chorea with Nirvanol is in the experimental stage and that further investigation is necessary before an estimate of its value can be reached. (Jour. A. M. A., July 2, 1932, p. 33.)

Lambert Chemical Co., Inc., Exploiters of Phos-Phane.—Physicians have been approached by solicitors or alleged solicitors for the Lambert Chemical Co., Inc., of Washington, D. C. Physicians are invited to share in the profits which are to result through their prescribing of the firm's "Phos-Phane." Phos-Phane has not been accepted by the Council on Pharmacy and Chemistry. One of the forms which physicians have been asked to sign is the "Trade Acceptance" blank. When signed, this blank becomes for all intents and purposes, a promissory note by which the physician is buying so many bottles of Phos-Phane, agreeing to pay for them, and helping to get them placed in the local drug store on consignment. It must be quite obvious that any physician who goes into this scheme is violating one of the fundamental tenets of his profession. No medical man with a proper appreciation of his responsibilities will be financially interested in the exploitation of medicinal agents that he may be called upon to prescribe. (Jour. A. M. A., July 2, 1932, p 55.)

Comparative Studies of Mercurochrome-220 Soluble and Other Antiseptics.—The Council on Pharmacy and Chemistry reports that it has authorized publication of the report, "Comparative Studies on Mercurochrome and Other Antiseptics," by W. F. von Oettingen, O. V. Calhoun, V. A. Badertscher and R. E. Pickett. In authorizing publication of this report the Council directed that it be explained that Hynson, Westcott & Dunning have agreed to revise their advertising claims in accordance with the findings of the paper and that the Council had voted to continue the acceptance of Merchurochrome-220 Soluble, and the description of the product appears in New and Nonofficial Remedies, 1932. From the report of von Oettingen, *et al*, it appears that Mercurochrome cannot be relied upon to destroy bacteria that have penetrated into the living tissue of a wound or of the skin; it could do no more than disinfect the surface and the necrotic tissue. This limitation is shared more or less by all antiseptics so that no substance can be properly called a safe and certain wound antiseptics. No antiseptic takes the place of thorough cleansing and surgical treatment. When these are not practical, for "first aid" or for very superficial wounds, antiseptics are probably better than no treatment at all. The antiseptic efficiency of mercurochrome is not outstanding, and for skin disinfection the aqueous solution is distinctly inferior. The absence of irritation may be an advantage, especially with open wounds, and for prolonged treatment; but its limitations should always be borne in mind. (Jour. A. M. A., July 9, 1932, p. 127.)

Feeding Formulas for Infants in Lay Advertising.—The Committee on Foods reports feeding of an infant by routine feeding formulas and instructions distributed by food manufacturers, or according to directions, printed material, or advice of any person other than the attending physician who can personally observe the condition of the baby, may seriously endanger the health of the infant, and is considered to be in conflict with the best experience, authoritative judgment, and basic principles in infant feeding and is not permissible. No objection is taken to published directions for the preparation of mixtures for use in infant feeding. (Jour. A. M. A., July 30, 1932, p. 391.)

Book Announcements

The American Illustrated Medical Dictionary: A complete Dictionary of the terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Science, Biology, Medical Biography, etc. By W. A. NEWMAN DORLAND, M. D., Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association. Sixteenth Edition, Revised and Enlarged. Octavo of 1,493 pages, 941 illustrations, 279 portraits. Philadelphia and London: W. B. Saunders Company, 1932. Flexible and stiff binding. Plain, $7.00 net; Thumb Index, $7.50 net.

After a lapse of three years this popular lexicon is out with the most thorough revision it has ever had. Done under the supervision of an editorial committee of the American Medical Association, it becomes practically the official dictionary of the American profession.

An interesting feature to Virginia doctors is the fact that most of the new words—of which there are over 3,000—come through the collaboration of Dr. E. C. L. Miller, of the Medical College of Virginia.

In addition to the flexible back, it also has a stiff binding like other upstanding books.

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The Practical Medicine Series. Comprising Eight Volumes of the Year's Progress in Medicine and Surgery. Series 1931. Chicago. The Year Book Publishers, Inc., 304 South Dearborn Street. 12mo. Cloth.

General Surgery. Edited by EVARTS A. GRAHAM, A. B., M. D., Professor of Surgery, Washington University School of Medicine, etc., St. Louis. 8804 pages. Price, $3.00.

Obstetrics. Edited by JOSEPH B. DeLEE, A. M., M. D., Professor of Obstetrics, University of Chicago Medical School, etc., Chicago. **Gynecology.** Edited by J. P. GREENHILL, B. S., M. D., F. A. C. A., Attending Gynecologist, Cook County Hospital, Chicago. 665 pages. Price, $2.50.

General Therapeutics. By BERNARD FANTUS, M. S., M. D., Professor of Therapeutics, University of Illinois College of Medicine, Member Revision Committee U. S. Pharmacopoeia and of National Formulary Revision Committee, and LOUIS B. KARTOON, B. S., M. D., Instructor of Medicine, University of Illinois College of Medicine. 467 pages. Price, $2.25.

Dermatology & Syphilis. Edited by FRED WISE, M. D., Professor, and MARION B. SULZBERGER, M. D., Associate Professor, of Dermatology and Syphilology, N. Y. Post-Grad. Med. School & Hospital of Columbia University. **Urology.** Edited by JOHN H. CUNNINGHAM, M. D., Associate in Genito-Urinary Surgery, Harvard University, Post-Grad. School of Medicine. 472 pages. Price, $2.25.

Neurology. Edited by PETER BASSOE, M. D., Clinical Professor of Neurology, Rush Medical College of the University of Chicago. **Psychiatry.** Edited by FRANKLIN G. EBAUGH, A. B., M. D., Professor of Psychiatry, University of Colorado Medical School! Director Colorado Psychiatric Hospital, etc. 469 pages. Price, $2.25.

Tobacco Among the Karuk Indians of California. By JOHN P. HARRINGTON. Smithsonian Institution, Bureau of American Ethnology, Bulletin 94 United States Government Printing Office, Washington, D. C. 1932. For sale by the Superintendent of Documents, Washington, D. C. Price, 80 cents. Paper. 8vo. 284 pages.

Forty-Seventh Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution. 1929-1930. United State Government Printing Office. Washington, 1932. For sale by the Superintendent of Documents, Washington, D. C. Quarto of 1,108 pages. Paper.

United Fruit Company, Medical Department, Twentieth Annual Report. 1931. General Offices. Boston, Massachusetts. Made in United States of America. 8vo. 321 pages. Paper.

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Editorial

Ferret Out Potential Cancer!

"Let's in and ferret out" cancer!

No better time may come for the general practitioner than the present to actively push the campaign among his clientele, of ferreting out "spots," "lumps," "ulcers," "sores, "nodules," and the like in which potential cancer exists. In this period of slowed economic and depressed times, when urgency of crowded practice is not felt, and when medical, surgical, and special practice is more or less "depressed," may it not be fortuitous and opportune to grasp this time to push forward more intensively a campaign of search for incipient, latent, active or malignant defects, especially such as are easily detectable by periodical physical examinations? Such a campaign of effort to prevent and cure cancer must be, in the last analysis, an individual one—that is, it must be conducted by personal effort of medical practitioners on patients or persons coming within their field of service. Hence, it is necessary to engage the interest of every doctor in this matter. Effort "to carry the gospel" of cancer prevention can never find its best pace until the doctors of medicine and dental practitioners engage in the campaign with whole-heartedness and thoroughness, the like of which has not been heretofore brought into play. A keen sense of inquisitiveness must be aroused by each medical and dental practitioner to search for potential and possible factors that may culminate in cancer of the mouth. A sharp, sustained and vivid imagination as to the pathologic, and cellular changes of some uncured sore, some oral ulcer, some suspicious nodule, some indolent crack in the tissue, or some persistently dyspeptic, recurrent group of digestive symptoms must be applied in order to ever keep alert to the stealthy step of a possible invading cancerous growth.

Not only this in prevention, but also to ferret out already existing cancer growth before the irreparable stage has arrived, is another big urge of this problem. It is unquestionably true that there exist in the land thousands upon thousands of women alone who carry more or less unknown and unseen pathology, bordering upon the initial formation of actual cancerous cell growth that may be cured in a large percentage of cases, were the mass discovered and appreciated. To the urgent call of thousands, the land over, medical examinations may afford real protection and succor.

Then, there is that large group of cancer patients who are failing to receive the best treatment because of unscientific and unethical treatment. For these the medical profession may also do a helpful part in directing them to regular clinics for treatment.

Probably no one in the medical profession has done more to promote professional and public interest in the fight against cancer than Dr. Joseph Colt Bloodgood, of Baltimore. For more than a quarter of a century, by means of medical publications, in clinical lectures, in public lay meetings and in scientific gatherings, Dr. Bloodgood has taken a leading part in an effort to stimulate interest and dissemi-

nate knowledge in the prevention of cancer. As far back as 1915, Bloodgood made an inquiry into worldwide efforts of research in the problems of cancer. From this inquiry he learned that research had added nothing to the practical diagnosis and treatment of cancer up to that date. It must be remembered that as late as 1915 cancer throughout the world was recognized clinically, largely from its gross pathology. In spite of the large place that the microscope had won in the study of cellular pathology of tumors, this instrument had not won a place for use in the operating room in making a diagnosis from frozen sections. According to Bloodgood, the best clinics throughout the world depended on a check up of clinical and gross diagnosis in the pathological laboratory by microscopic study of material sent there. Likewise in this period, 1915, X-ray and radium in the treatment of cancer were receiving only scant appreciative attention from a small group of the medical profession throughout the world.

It was about 1913, that the American Society for the Control of Cancer was organized and began its worldwide efforts to carry forward the campaign in the early diagnosis and treatment of cancer. In spite of the effects of these forces, professional and lay, working to control cancer, and working valiantly through the intervening years, the need now for more thorough effort is apparent to all. Diagnosis and treatment have been quite perfected, but the disease still prevails in wide distribution. This is because potential factors, its incipient stages, and its early gross pathological forms are not soon enough brought under the management and treatment of forward looking, scientific and regular physicians.

How can these forces of skill in curing and controlling cancer be more effectively brought into play? Only by a wider and more thorough search and moderation of the factors that bring about the eventuating cancerous growth. This point may be illustrated by two common prevailing conditions: 1st, in cancer of the mouth. Ulcers, cracks, fissures and sores within and about the mouth should be assiduously searched for by dentists and other specialists practicing about the mouth, by general practitioners when patients apply for treatment for other things, and such lesions should be cured. 2nd, cancer of the cervix should be ferreted out. This group of lesions offers more restricted possibilities in the number of searchers. The importance for examining the cervix should be earnestly and vigorously sought. It is not enough to wait until a chance offers, but it should be the effort of practitioners to seek to create in the minds of female clientele the wholesome need for a periodic examination of the cervix. This can be done by obstetricians, gynecologists, surgeons and general practitioners. Periodic examination, especially in the post-menstrual period, is particularly important, as in this period of female life, failure to make inspections here is most common. It should be routine for practitioners to advocate periodical pelvic examinations in this period of life. Such general action of the medical practitioner would make for decided advance in prevention and cure of this malady.

The State health officials and the public lecture platform may materially assist in this field of effort by an educational campaign on cancer. Certainly, the subject may have vigorous assistance from the lay press. At the birth of every baby, the first steps may be taken to prevent cancer. Here, the family physician or general practitioner or the obstetrician has the big opportunity, both in the doing of skilful work and in the implantation of an educational truth about cancer control.

As a prominent leader in this country, fighting for cancer control by prevention and cure, Dr. Bloodgood says that he is now living in the "fifth decade of a continuous cancer survey" and, based upon this vast experience, he holds that the doctor is the chief hope in the fight against cancer.

The forces of public health, newspapers, magazines and radio are useful and important, but the individual efforts of wide-awake, skilful, careful doctors, the land over, must be added in order to ferret out and kill cancer.

Diet in Bright's Disease.

Oldish doctors of the present day naturally assume something of the mental attitude of a "doubting Thomas" as they read of and observe certain radical changes or reforms creeping into medical papers, on the feeding of protein to patients with Bright's disease. Before the turn of the century, probably no standard of dietary absolution was more established than that the patient with Bright's disease should eat little or no meat. *Red* meat was tabooed. Now we read of strange suggestions that this interdiction of meat in nephritis is an error and should be abandoned as it has

been practiced in the past. Of course, a change of front like this is nothing new or startling. Surgical and medical progress glitters with changes and modifications of previously established and treasured "nuggets of truth" in practice. So after all, it is not to be wondered that now we see reasonable suggestions of liberal use of protein in the diet of the nephritic. Changes must be taken with certain scientific caution, and as one notes the announcement of a reversal of method, one should not altogether let hold of that which is known to be good while reaching for that which promises even greater good: a promising experimental forecast may not have fruition in fact; there may be a modicum of truth there but not the full measure as suggested in first reports.

McLester* has presented for us a statement of recent observations on protein in nephritis and has succinctly sketched the reasonable outline of the changing view of protein feeding in various types of nephritis. As intimated, the whole question of the protein problem in nephritis is unsettled. Even in health, the harmful effects of meat eating have been overplayed or over emphasized, while the essential needs of protein in the daily diet for purposes of repair and strength have been allowed to remain in the background. Of course, in a comment of this sort, one cannot present evidence to show that such a change of attitude toward protein intake is more or less justified. However, it seems reasonable, in the light of recent research, to say that to enjoy full health and a vigorous body, a consumption of protein food must be abundant and adequate. In Bright's disease it is held that the same reasoning should be applied. McLester states the case with intriguing effect as he cites the instances of the forces involved in the process of an acute Bright's disease. The infection which causes the acute nephritis produces a toxic destruction of body protein, and then later brings about a marked loss of albumin through the urine. So here we have a toxic destruction of protein on the one hand and a leakage and loss of protein in the urine on the other. This two-way loss brings to the body "a measurable plasma protein deficit." As a result of this deficit, water balance in the body is profoundly upset and edema results and aggravated symptoms of Bright's disease obtrude and persist. In acute hemorrhagic nephritis, a majority of cases, where a low level of plasma protein continues beyond the first week, resolve themselves into chronic nephritis. It was found that by permitting a liberal intake of protein, adequate in amount to make good the deficit, the chances for complete recovery were favorable. Not only in acute nephritis, but also McLester points out in that "form of chronic nephritis which has been called degenerative Bright's, by Addis, and chronic nephritis with edema, by Christian, a liberal protein intake is imperative."

The argument of looking back into the body, beyond the diseased kidney, and recognizing the needs of replacement of protein in the muscles, blood, nerves, and glandular system (that great functioning protein mass of tissue) and furnishing by protein-intake replenishment of losses accruing through the diseased kidney and as the result of the toxic processes that brought out the kidney pathology, seems forceful and convincing. Against this remains the plea that as it is the function of the kidney to eliminate the end-products of the body protein, it would seem questionable to add more work to the diseased kidney, but, as "the hair of the dog is good for the bite," by preventing low level of plasma deficit, the kidney is more able to restore itself to normal function. When it comes to a type of chronic nephritis (involving sclerotic changes), the argument for increased protein intake does not hold good because, as Vanslyke has pointed out in this type of nephritis, plasma protein content was entirely normal. But McLester feels that even in this form of Bright's, there is a tendency to restrict protein too much. There has consequently resulted increasing body weakness and progressive anemic symptoms. To combat these malignant symptoms, McLester advocates a more liberal intake of protein. In acute and chronic edematous nephritis 150 grams daily and in nephrosclerosis 75 grams daily is a general recommendation of this author.

Hemorrhage From the Stomach.

This is a practical problem in practice. Practitioners are not infrequently confronted with hemorrhage from the stomach in the course of work. The problem of etiologic diagnosis under such an exigency is urgent, the immediate and opportune treatment is important, and continued management of the case

*McLester. J. A. M. A., July 16, 1932.

is a responsibility of no mean importance. So it is not out of place to direct our readers' attention to a paper recently published that deals with general considerations of this subject. The paper, entitled "Diffuse Hemorrhage from the Stomach," is by Edward L. Bortz, M. D., of Philadelphia, and appears in *Archives of Internal Medicine*, for July. 1932.

From quite an assembly of possible causes of gastric hemorrhage, one may take those most frequently acting, as carcinoma; ulcer (acute, subacute and chronic); certain infections as produce gastritis or alcoholism; cardiovascular diseases (like heart failure, endocarditis, thromboses, hypertension, aneurysms, ruptured varices in the esophagus); blood disorders, as leukemia, anemia, the purpura, and renal diseases, cirrhosis, syphilis, and allergy; and from ingestion of such chemicals as lye, iodine, etc.

Probably ulcer, cirrhosis of the liver, Banti's disease, heart disease, and carcinoma rank as foremost of etiologic factors in diffuse gastric hemorrhage. The location of the bleeding point is difficult as is the origin of the hemorrhage. The suddenness, the amount and the absence of premonitory symptoms make gastric hemorrhage difficult of complete diagnosis, but a thorough physical and laboratory study of the patient offers an explanation of the symptoms sooner or later and such diagnostic features discovered serve to direct the course of treatment to be pursued, looking to prevention of the recurrent hemmorhage.

In the matter of treatment, immediate and ultimate therapeutic measures are indicated. The first stage involves "shock" and exhaustion. This calls for absolute rest, application of the ice bag to epigastrium, possibly hypodermic administration of morphine, lowering of the head, and interdiction of food. The lower bowel should be washed out and for forty-eight hours no food given. Transfusion is a moot question, but it would be indicated if hemorrhage had gone extremely far and was continuing. Such a measure not only tends to restore hemoglobin, but to favor a stoppage of bleeding. At least, this is a view held by some internists. If a patient's cells have fallen to two million, it is common practice to give 300 to 500 c.c. of blood by transfusion. In the case of bleeding from the mucosa of the stomach, liquid extract of Ceanothus americanus has been given, and in our experience it has been helpful. In one patient who has suffered eighteen large gastric hemorrhages during the past ten years, this remedy has been uniformly relied upon and used in conjunction with other measures. Normal horse serum, or the patient's own serum, in doses of 2 to 10 c.c., have been tried with effectiveness.

Soper has called attention to treating gastric hemorrhage by a retention catheter introduced by the nasal orifice. Through this the stomach is lavaged with cool water. By this means new hemorrhage may be easily and quickly detected and the acid secretions withdrawn. On the fifth day the tube is passed on into the duodenum and the administration of high caloric food is begun. Operative procedures at this stage have proved to be wanting in safety and have doubtful value.

After cessation of bleeding has been accomplished, nutritional problems become paramount in importance. Duodenal feedings through the Jutte tube have proved of immediate value in getting adequate nourishment to the patient at the critical period. Blood filled with metabolites serves to the body essential requirements for reconstruction from the loss of blood and for rekindling the fires of body strength so needed by these patients. To food may be added liver extract and iron. All focal infections should be removed and continued rest for recuperative value should be practiced.

Should indications of gastric hyperacidity or acidity present themselves, atropine should be administered from one to three times a day. Calcium gluconate by mouth and parathormone by subcutaneous injection have been suggested where calcium deficiency is found.

Fundamentally, the problem remains of removing the factors which originated the hemorrhage. This part of the problem may be in the domain of surgery, as would be the case in intractable ulcer or in Banti's disease, when removal of the spleen has been known to accomplish favorable results in prolonging life.

If the problem is one that lies in the field of medicine, such as cirrhosis of the liver, arteriosclerosis, heart decompensation, syphilis or blood dyscrasias, then therapeutic management lies in the realm of internal medicine and requires the highest order of study and effort to forestall the recurrence of hazardous gastric hemorrhages.

President's Message

The Annual Meeting.

At this season of the year the President naturally feels more acutely the responsibility of his office, as the end of his term approaches and he contemplates with anxiety the completion of plans and arrangements for the annual meeting. As all of you know, we are meeting this year in Richmond, and it is the sincere desire of the officers of the society and those most interested in its welfare that we have a successful and enthusiastic meeting; this, of course, will be in a large measure determined by the number attending the clinics and exercises. With a membership of over 1,800 we should have a registration of at least 1,000.

The local committee can be depended on to do all in their power to contribute to our convenience, welfare and comfort. The program will be practical, entertaining and instructive. In addition to the scientific papers of the regular program, plans are being made to arrange a number of clinics to be conducted by visiting and local clinicians under the direction of the faculty of the Medical College of Virginia. The committee plans to arrange the program so that there may be ample time for full and free discussion of each paper, since we feel that often the discussion of a subject brings out more useful information than the mere reading of an article. The clinics will be an important feature of the meeting, and will be specially interesting to the alumni of the college, who will enjoy this opportunity to renew contacts with their former teachers and classmates.

It is our intention to send a special message to the officers of each component society asking that a special meeting of each society be held to canvass the members and urge as many as possible to attend the annual meeting in Richmond. It is important that a delegate and alternate be sent by each society and that they attend all the meetings of the House of Delegates, and come prepared to express the views of their local societies on questions and points that are likely to be discussed.

Our State Society was organized in Richmond, November 2, 1870. This will be our 62nd anniversary. Of the 90 charter members who met and organized the Society, none are living today. Would it not be appropriate and interesting for us to take some special action in honor of those members who laid the groundwork for all that the Medical Society of Virginia and organized medicine has accomplished in this State in the last half century?

We are meeting in our new home in the new building of the Richmond Academy of Medicine and the Library of the Medical College of Virginia. Let all who have neglected to take a vacation this summer join the crowd in Richmond. Some of us are behind the times and need to rub shoulders and swap ideas with our friends and neighbors. You owe it to yourself, to your family, and to your patients to take a vacation. You will never have a better opportunity than November the first, and never a better place than Richmond.

I. C. Harrison, M. D., *President,*
Medical Society of Virginia.

Department of Clinical Education
OF THE MEDICAL SOCIETY OF VIRGINIA

Second Circuit of Courses in Prenatal and Postnatal Care.

Richmond, Petersburg, Farmville and Lawrenceville are the centers for the second circuit of post-graduate courses under the instruction of Dr. Maxwell E. Lapham, Field Clinician of the Joint Committee on Prenatal and Postnatal Instruction. The classes began in the week of August 22nd.

Because of the summer recess of the several medical societies, the organization of the second circuit has proceeded under some handicaps and comparatively slowly. Even the required approval of the course by the local profession had to be secured by informal means in two cases. In Richmond Dr. R. Finley Gayle, Jr., and Dr. James H. Smith, President and President of the Board of Trustees,

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respectively, of the Richmond Academy of Medicine, by conference with individual members of the Board to be ratified at a later meeting, obtained authorization for a class. Almost single-handed and alone Dr. F. N. Mallory established a class in Lawrenceville by submitting an application signed by every physician of Brunswick County except one, to whom the matter could not be presented at the time, and by furnishing most of the required minimum enrollment of ten. In Farmville the class was approved by unanimous vote of the staff of the Southside Community Hospital at its meeting on July 11th, and a committee consisting of Drs. Geo. A. Arhart, W. R. Martin and H. C. Rucker, was formed to work with Dr. Ray A. Moore, member of the Joint Committee, in organizing the class. A special called meeting of the Medical Faculty of Petersburg on July 28th unanimously approved the course and set up a local committee, composed of Dr. Ruth Mason-Grigg, Chairman, and Drs. Wright Clarkson, J. Bolling Jones and W. A. Reese, to take active charge of the conduct of the class.

The unique feature of the new circuit is the offering of a class for colored physicians in Petersburg. A committee of the Old Dominion Medical Society had requested the Chairman of the Joint Committee to offer some of Dr. Lapham's classes for their members, and as the educational center for Negroes in Virginia is located in Petersburg, it seemed expedient because of their great interest to establish an experimental class there on the same basis as that upon which other classes are formed. A committee composed of Dr. W. F. Clarke, Chairman, and Drs. F. L. Brown, J. B. Darden and W. B. Greene arranged for the enrollment of physicians of their race.

At this writing the enrollments for the new courses are hardly more than half complete. The details for the classes are as follows:

FARMVILLE: The class meets on Mondays, beginning August 22nd, at 3:00 P. M. in the Staff Room of the Southside Community Hospital. *Enrollments:* Drs. J. R. Bailey, J. M. Habel, T. G. Hardy, T. E. Knight, Ray A. Moore, G. L. Morriss, J. Weldon Smith, Joseph H. Smith, W. E. Smith, C. S. Stone and J. P. Trent.

LAWRENCEVILLE: The class meets on Tuesdays, beginning August 23rd, at 11:00 A. M. (hour of subsequent meetings to be decided by the class) in the Public Health rooms. *Enrollments:* Drs. T. H. Anderson, F. N. Mallory, R. H. Manson, C. E. Martin, M. H. Tredway, J. B. Vaiden and T. H. Valentine.

PETERSBURG: The class for colored physicians meets on Wednesdays, beginning August 24th, at 3:00 P. M. at the Virginia State College for Negroes. *Enrollments:* Drs. F. L. Brown, W. F. Clarke, J. B. Darden and W. B. Greene.

PETERSBURG: The class meets on Thursdays, beginning August 25th, at 3:00 P. M. in the Petersburg Hospital. *Enrollments:* Drs. Wright Clarkson, Joel Crawford, George S. Fultz, S. E. Gunn, J. L. Hamner, J. H. Hargrave, R. T. Hawks, C. T. Jones, H. C. Jones, J. Bolling Jones, C. W. Lynn, Ruth S. Mason-Grigg, Randolph McCutcheon, M. F. McKinney, W. A. Reese, E. W. Young.

RICHMOND: The class meets on Fridays, beginning August 26th, at 3:00 P. M. in the Out-Patient Department of the Medical College of Virginia at 11th and Clay Streets. *Enrollments:* Drs. J. J. Anderson, B. B. Bagby, Greer Baughman, H. A. Bullock, R. S. Faris, J. B. Fisher, Alexander McLeod, A. C. Monroe, W. H. Parker, J. K. Richardson, J. H. Winfrey, A. E. Turman and J. W. Turman.

EASTERN SHORE COURSE AT NASSAWADOX

Dr. Lapham's two week's course in the Northampton-Accomac Memorial Hospital has proved successful in keeping with former courses. In spite of the difficulty of attendance every day in the sizzling part of summer, the course during the first week had an average attendance of fourteen. The doctors enrolled are: Drs. S. K. Ames, W. M. Burwell, C. E. Critcher, J. LeC. DeCormis, H. L. Denoon, O. R. Fletcher, J. G. Goode, W. C. Henderson, J. W. Jackson, S. S. Kellam, D. L. P. LeKites, J. M. Lynch, A. A. Mathews, John W. Robertson, R. J. White, A. F. Wood. Visitors who have attended include Drs. C. J. Bradshaw, W. T. Green, W. W. Kerns, G. W. Holland, J. R. Hamilton, and Vaughan.

FINAL REPORT ON THE FIRST CIRCUIT

The final bona fide enrollments for the five centers in the first circuit were seventy-four physicians, a total which excludes four who enrolled but never attended. In addition, twenty-nine other persons, mostly physicians, but including a scattering of nurses and medi-

cal students, visited the classes. The rate of attendance was commendably high, 76.8 per cent. The average attendance each week, including members of the classes and visitors, was sixty-two. Sixteen physicians achieved the distinction of perfect attendance. The complete details for the first centers are presented in the table below:

SUMMARY FOR THE FIRST CIRCUIT

	Enrolled	Days Attended by those enrolled	Days Attended by Visitors	No. Visitors	Average Attendance	Per cent Attendance of those enrolled
Nelson County	8	65	--	--	6.5	81.3
Lynchburg	13	106	28	15	13 4	81.6
Lexington	14	92	4	4	9.6	65.7
Staunton	18	157	9	5	16.6	87.2
Charlottesville	21	148	11	5	15.9	70.5
Total	74	568	52	29	62	76.8

FUTURE COURSES

The first half year in the instructional program in prenatal and postnatal care will be finished with the close of the second circuit at the end of October. Dr. Lapham, the Field Clinician, will spend the first week in November in attendance at the meeting of the Medical Society of Virginia in Richmond. Immediately thereafter new courses will be begun to extend into February, with a two weeks' break at the holiday season. Thereafter, a fourth circuit will be organized to consume the remainder of the first year's program. Whether the program will be continued during the second and third years depends, of course, upon the favorable action of the Medical Society of Virginia and the grants-in-aid made by the Commonwealth Fund.

The location of the third and fourth circuits is yet undecided. The possible areas are Southside Virginia, South Tidewater, the Northern Valley, or the Southwest.

GEO. W. EUTSLER,
Secretary Joint Committee.

Proceedings of Societies

The Northern Neck Medical Association

Met at Warsaw, Va., in regular semi-annual session, on May 26, 1932. Dr. Samuel Downing, of Newport News, presided. This was one of the most largely attended meetings for a number of years, there being, in addition to members, doctors from Washington, Fredericksburg and Richmond, who added greatly to the interest of the meeting. Besides papers from the local men, there were interesting and helpful papers by Dr. A. Ray Dawson, of Walter Reed Hospital, Washington, D. C., and Drs. T. N. Barnett, James H. Smith, D. G. Chapman and W. L. Peple, of Richmond.

Dr. E. R. Moorman, who had recently located at Kilmarnock, was elected a new member of the Association and delegates and alternates were elected from the four counties composing this organization to represent the Society at the Richmond meeting of the Medical Society of Virginia.

It was decided to hold the next meeting at Montross, Va., on the fourth Thursday in October, 1932.

R. E. BOOKER, *Secretary.*

The Fairfax County Medical Society

Held its annual meeting on August 4th and elected the following officers for the ensuing year: President, Dr. William P. Caton, Accotink; vice-presidents, Drs. Jessie T. Scott, Oakton, and S. T. Noland, Clarendon; secretary, Dr. A. L. Carson, Fairfax; and treasurer, Dr. F. M. Brooks (re-elected), Fairfax Station. Delegate and alternate were also elected for the Richmond meeting of the State Society.

It is of interest to note that the new president, Dr. Caton, has been secretary of the society for twelve years and has filled this position most acceptably.

The Lee County Medical Society

Met at Jonesville, Va., on August 1st for its regular meeting, with Dr. G. B. Setzler, Pennington Gap, presiding. After a most excellent dinner by the hosts, Drs. J. B. Muncy and T. B. Ely, the business session was held. Dr. T. H. Hutchinson, who has recently located at Pennington Gap, was cordially received as a fellow of the Society. Delegate and alternate were elected to represent the Society at the

Richmond meeting of the Medical Society of Virginia.

An interesting feature of the program was the report of a case of Malta Fever which was brought to the hospital at Pennington Gap. Dr. Setzler, in reporting this case, presented a very full description of the disease and its occurrence. He stated that while this disease is considered a tropical and subtropical one, it has made its appearance in every state in the Union and he had found that in 1929, thirteen hundred and five cases were reported as having occurred in the United States.

W. J. Innes, *Secretary.*

The Fauquier County Medical Society

Was entertained by Dr. John T. Sprague and Dr. M. B. Hiden, at "Dunworth," the residence of Dr. Sprague, August 15, 1932. All of the physicians of Fauquier, Culpeper, Loudoun and Rappahannock Counties, and many of the physicians from the Counties of Prince William, Fairfax, Arlington and the cities of Front Royal, Winchester, Alexandria and Fredericksburg were invited, as also several members of the Hospital Board and several prominent citizens. Each man was invited to bring one lady guest. Dr. Karl Blackwell, of Richmond, who was visiting in this section, was also invited. All of the cities and counties were well represented, there being an attendance of seventy.

The President and Chief of Staff, Dr. Richard Mason, presided. An excellent talk was given by an insurance expert on the subject of "Cheaper Automobile Insurance for Physicians," and was interesting and well received. Drs. Charles H. Armentrout, Flint Hill, and A. T. Sheffield, Sperryville, were elected to membership and recommended for medical practice in the local hospital, and Dr. D. T. Saffer, Middleburg, was also endorsed for medical practice at the hospital. Delegate and alternate were elected to the meeting of the Medical Society of Virginia in Richmond, November 1st-3rd, and the following officers were unanimously elected for the ensuing year: President of the Society and Chief of Staff of the Fauquier County Hospital, Dr. John T. Sprague, Warrenton; vice-presidents and assistant chiefs of Hospital Staff, Drs. Vaden L. McCullers, Remington, and Stewart McBryde, Manassas; treasurer, Dr. Henry L. Townsend, Marshall; and secretary, Dr. M. B. Hiden, Warrenton.

The following subject was then proposed for discussion, "Has the Medical Society of Virginia Been an Advantage or a Disadvantage to the Rural Practitioner?" Dr. M. B. Hiden gave a brief outline of all that he had heard said in favor of and in disfavor of the State Society. This subject was then discussed most enthusiastically by the following physicians: Dr. John A. Gibson, Leesburg, Dr. Sam W. Maphis, Warrenton, Dr. Richard Mason, The Plains, Dr. Wade C. Payne, Haymarket, Dr. John T. Sprague, Warrenton, Dr. W. O. Bailey, Leesburg, Dr. G. Frank Simpson, Purcellville. It was the general consensus of opinion that the State Society should be run more for the Rural Practitioner and less for the Specialist, and that the State Society should appear less in sympathy with State and Federal Medicine.

Dr. Richard Mason then brought up the weekly report of communicable diseases now required by the State Board of Health. This subject was thoroughly discussed by the following physicians: Dr. M. B. Hiden, Dr. J. A. Gibson, Dr. S. W. Maphis, Dr. W. C. Payne, Dr. J. T. Sprague, Dr. Stacy Noland, Dr. W. O. Bailey, Dr. G. Frank Simpson. It was the opinion of these speakers that the State Board of Health was asking too much and that there was a limit to what they should expect the local physicians to do. The speakers expressed themselves perfectly willing to co-operate with the State Board of Health as far as necessary for the protection of the community, but these physicians were of the opinion that long and detailed weekly reports were unnecessary and were too much for the State Department of Health to ask.

Dr. W. D. Sydnor, Mayor of Hamilton, Va., then made a very humurous and delightful speech on "Moonshine and Ladies." Dr. M. B. Hiden made a short announcement on the following subjects: "A New Operation for Appendicitis Acute, Divised and Used at the Local Hospitals," "A New Operation for Appendicitis Ruptured, Also Divised and in Use at the Local Hospitals," "The Use of Intramedullary Grafts of Fresh Beef Bone in Fractures of the Femur and of the Humerus," which have been used successfully a great number of times in this locality, "A Lecture by Dr. J. Shelton Horsley, of Richmond, Va., on Cancer Control, illustrated with a moving picture, soon to be given in this section." Dr.

Hiden stated that the operations mentioned above had been reported before the State Medical Society, had been published in the State Medical Journal, and had been complimented on favorably by a number of prominent surgeons. He urged all of the doctors and guests to attend Dr. Horsley's lecture.

There being nothing else of importance to be taken up at this time, the meeting adjourned and a most delicious supper and other refreshments were served by Dr. and Mrs. Sprague, the crowd departing about 1:00 A. M.

M. B. HIDEN, *Secretary.*

News Notes

Richmond Meeting of the State Society.

Now that doctors are returning from vacations, our thoughts should turn to the annual meeting of the Medical Society of Virginia, which is to be in Richmond on November 1st, 2nd and 3rd. The list of titles in hand guarantees the discussion of a number of interesting subjects.

A few questions have been received for the "Question Box." We can continue to receive these until September 10th, though the time limit for titles for papers was reached on September 1st. The Question Box is a new feature and we hope may prove helpful.

Societies which have not reported names of their delegates and alternates to the Secretary, are requested to send them to the Society's Office by September 15th. This list is to appear in the October issue of the MONTHLY, which will also carry the Preliminary Program of the Richmond meeting.

Medical Society of Virginia Changes Its Address.

After nearly thirteen years in one location, the Society has changed its quarters and is now domiciled in the splendid new building of the Richmond Academy of Medicine at 1200 East Clay Street, in Richmond. This should be readily accessible to doctors visiting and living in Richmond as it is just across the street from McGuire Hall of the Medical College of Virginia and convenient to all the hospitals of the College. The office is quite attractive and visitors will be welcomed at any time.

The Academy of Medicine building and the new library of the Medical College of Virginia are under one roof though they are practical in the form of two units. The Academy building fronts on Clay Street while the Library has its entrance on Twelfth. The stack rooms of the Library will provide space, as needed, for approximately 100,000 books. The Academy building, in addition to housing the office of the State Society, has a most attractive lounge for its members and guests, an auditorium which will accommodate about 250, several committee rooms, and a dining hall and kitchen. Both units consist of two stories and basement. A special attraction of the Academy building is the room in which will be housed the valuable collection of books and papers which have been given the local society by Dr. Joseph L. Miller, of Thomas, W. Va. The formal opening of the Academy building will be on the evening of September 20th, on which occasion there will be a number of invited guests.

Buxton Clinic Opened.

On July 18th, the Buxton Clinic, Newport News, Va., which is to be operated in conjunction with Elizabeth Buxton Hospital, was formally opened to the public. Governor John Garland Pollard was the principal speaker at the exercisse which were held in the morning. Immediately following these, there was a reception in honor of the distinguished guests. It is estimated that from 1,000 to 1,200 people visited the Clinic for the exercises and reception.

The Clinic building was constructed at a cost of approximately $100,000 and contains offices, laboratory equipment, consulting rooms for the members of the staff on the first and second floors, and has nurses' quarters on the third floor.

In the evening, the graduation exercises were held for the ten graduates from the Training School of the Hospital, and Mr. Homer L. Ferguson was the principal speaker on this occasion.

Dr. Joseph T. Buxton was the founder of the Elizabeth Buxton Hospital in 1906 and has continued at its head since that time, making additions and improvements constantly. The Clinic seems to leave nothing to be desired—certainly for the present.

XUM

Married.

Dr. Johnson McGuire, son of Dr. and Mrs. Hugh McGuire, of Alexandria, Va., and Miss Elizabeth Eton Livingood, both of Cincinnati, Ohio, at the summer home of the bride in Quebec, June 5th. Dr. McGuire is connected with the medical department of the University of Cincinnati.

Dr. Blanton L. Hillsman and Miss Evelyn E. Holdcroft, both of Richmond, Va., July 26th.

Dr. William E. Tomlinson, Jr., and Miss Margaret Corinne Peaco, both of Richmond, Va., recently. Dr. Tomlinson is an alumnus of the Medical College of Virginia of the class of '29.

Dr. John Thorpe Metcalf, of the class of '30, Medical College of Virginia but now of Jersey City, N. J., and Miss Dell Catherine Fleming, Richmond, Va., August 5th.

News Notes from the Medical College of Virginia.

Several thousand technical volumes composing the library have been transferred from McGuire Hall to the new library building adjoining the Richmond Academy of Medicine. While at present the library includes practically 20,000 volumes the stack rooms of the new building will provide space, as needed, for some 100,000 books. The college library building and the adjoining new building of the Richmond Academy of Medicine are seen as a fulfillment of long cherished hopes of the college and the medical profession.

Dean Wortley F. Rudd, of the School of Pharmacy, and Dr. W. G. Crockett, professor of pharmacy, attended the annual meeting of the American Pharmaceutical Association held August 22nd to 27th, in Toronto, Canada. At the Toronto meeting Doctor Crockett presented a paper prepared in collaboration with Mr. W. M. Fraser and G. V. Thompson of the School of Pharmacy. This paper was the result of research work done by Dr. Crockett and two assistants in the behavior of ethynitrates in copaiba emulsions.

During the month of July 4,889 visits were made to the outpatient department of the college, the maximum number of patients for one clinic day being 265. 1,118 tests were made and 1,503 prescriptions filled by the drug department of the college. Of the 4,889 patients receiving service in the outpatient department only 35 per cent were able to pay anything toward the costs of the service to the patients. For the same month last year only 3,945 visits were made, or a gain of 944 visits.

In Charge of Orthopedic Surgery at University of Virginia.

Dr. Robert V. Funston, recently of Detroit, Mich., has been elected professor of orthopedic surgery in the University of Virginia, School of Medicine, and assumed his new duties on July 1st. This is the position formerly held by Dr. Allen F. Voshell who resigned to go to Baltimore.

Dr. Funston is a native Virginian and graduated from the University of Virginia in 1918. Upon completion of his service in the World War, he became connected with the department of orthopedic surgery in the University of Iowa and remained there until 1922 when he entered practice in Detroit. He has been very active in orthopedic work in that city and, as a surgeon with the Michigan Crippled Children's Commission, has held clinics throughout that state.

Appointments on Committee Work of State Society.

Dr. W. L. Powell, Roanoke, has been appointed chairman of the Committee on Group Societies of the Medical Society of Virginia, to fill the vacancy caused by the death of Dr. Charles R. Grandy. Dr. Wm. Lett Harris, Norfolk, has been appointed a new member of this committee of which Dr. W. B. McIlwaine, Petersburg, is the third member.

Dr. Clarence Porter Jones, Newport News, who has been a most active member of the Walter Reed Commission of the State Society since its formation several years ago, succeeds Dr. E. C. S. Taliaferro, deceased, as chairman. Dr. O. T. Amory, Newport News, has been appointed a new member. Other members of the Commission are Drs. H. S. Hedges, Charlottesville, P. W. Boyd, Winchester, and James D. Clements, Ordinary.

The Southwestern Virginia Medical Society

Will hold its regular semi-annual meeting on September 20th and 21st in Roanoke, Va., with headquarters at Hotel Roanoke. It is announced that there will be a number of very excellent papers on the program. As this is the annual meeting, the election of officers will be held at this time. Dr. George A. Wright, Marion, is president, and Dr. A. M. Showalter, Christiansburg, secretary-treasurer.

Speakers for Educational Meetings.

The Department of Clinical Education of the Medical Society of Virginia, in response to the request of officers and chairmen of program committees of local societies, has prepared a list of clinicians from the faculties of Virginia's two medical colleges, who have volunteered to make addresses and demonstrations at meetings accessible to them.

This Department, as the educational agency of the Medical Society of Virginia, stands ready to assist in any way it can the scientific and instructional programs of the component and constituent societies.

Officers who have not received a copy of this list may have one by writing Mr. George W. Entsler, executive secretary of the Department of Clinical Education of the Society, at Box 1487, University, Va.

Dr. O. W. Carper,

Of the class of '31, Medical College of Virginia, who recently completed a year's service at the State Hospital, Hazleton, Pa., has located at Front Royal, Va., where he will be engaged in general practice.

Dr. Fred Taylor Renick

Has located at Crozet, Va., where he is engaged in general practice. He graduated from the Medical College of Virginia in the class of '31 and interned at the Old Soldiers' Home in Richmond during his senior year. He recently completed a year's service at Gallinger Municipal Hospital, Washington, D. C.

Dr. John C. Neale, Jr.,

Also of the class of '31, Medical College of Virginia, recently completely his internship at Memorial Hospital, Richmond, Va., and has located at Hilton Village, Va., for the general practice of medicine.

Win Commissions in Medical Corps of U. S. Army.

Four young Virginia doctors were early in August commissioned as first lieutenants in the U. S. Army Medical Corps and assigned to military posts as follows: Dr. Achilles L. Tynes, Jr., of Staunton, to Station Hospital, Fort Sam Houston, Texas; Dr. Edward M. Sager, of Petersburg, to Walter Reed General Hospital, Washington, D. C.; Dr. Robert B. Skinner, of Petersburg, to Fitzsimons General Hospital, Denver, Colo.; and Dr. John R. Copenhaver, of Marion, to Fort Banks, Mass.

Drs. Tynes and Skinner graduated from the University of Virginia, School of Medicine in 1930, and Drs. Sager and Copenhaver from Medical College of Virginia in the same year.

Dr. Roy K. Flannagan,

In connection with his work as Assistant State Health Commissioner, has been detailed by Dr. Draper with the approval of Governor Pollard, to act as Medical Advisor to the State Department of Public Welfare. In this capacity, he will visit the jails in Virginia with the idea of working out a plan for standardizing the manner of handling ill inmates and improving the sanitation of the buildings.

Loss by Fire

Dr. Carter Weisiger, Cumberland, Va., suffered a heavy loss by fire the latter part of July, when much of the business section of the town was totally destroyed. Dr. Weisiger not only owned and operated the drug store which was destroyed but also owned several of the other buildings.

Dr. I. C. Riggin

Has returned to Virginia and on August 1st entered upon his new duties as director of county health work in Virginia for the State Department of Health. He has recently been an executive with the American Heart Association with headquarters in New York City, but has also had wide experience in public health work. He has taken the position left vacant by the resignation of Dr. H. G. Grant, who resigned in the early summer to become dean of the Medical School of Dalhousie University, Halifax, Nova Scotia.

Dr. B. T. Young,

Duffield, Va., has been elected chairman of the board of directors of the Lee Bank and Trust Company, with principal offices at Pennington Gap, Va. This bank has just been formed by the merger of several Lee County banks.

Dr. Joseph F. Geisinger,

Richmond, Va., was elected president of the Westover Hills Civic Club at its recent meeting.

Dr. Charles P. Cake,

Recently connected with the Herman Kiefer Hospital of Detroit, Mich., is now on the staff of the Metropolitan Life Insurance Company Sanatorium at Mount McGregor, N. Y. Dr. Cake graduated in medicine from the University of Virginia in 1925 and was located for a time in Norfolk, Va.

XUM

Dr. C. L. Walton,

Of the class of '31, Medical College of Virginia, who recently completed his internship at the Johnston Memorial Hospital, Abingdon, Va., has located at Glen Alpine, N. C., where he will be associated with Dr. Benj. L. Long in the practice of his profession.

Dr. Robert C. Bryan,

Richmond, Va., announces that on and after September 1, 1932, his office will be located at the Ambassador, 1108 West Franklin Street, this city.

Dr. F. Clyde Bedsaul,

Of the class of '26, Medical College of Virginia, has located at Floyd, Va., where he is associated with Dr. R. M. DeHart in hospital and general practice. Dr. Bedsaul formerly practiced in Grayson County and for the past year has been connected with the Virginia State Department of Health.

The Bone and Radiological Conference

Will be held September 19th-24th, at the Johns Hopkins University, 34th and North Charles Streets, Baltimore, Md., under the auspices of the Surgical Pathological Laboratory of Johns Hopkins Hospital. This Conference is open to all doctors and no formal papers will be read. The conference is under the direction of Dr. Joseph C. Bloodgood and Dr. Charles F. Geschickter.

There having arisen "a need for special studies by a more advanced group, in borderline cases in which diagnosis is difficult, and a need for an exchange of opinion and of case records on those rare conditions in which the clinical experience of any one individual is insufficient," these meetings were begun in September, 1930, and have continued to this time.

Any information relative to attendance upon this Conference may be obtained from Miss Maude E. Walker, Surgical Pathological Laboratory, Johns Hopkins Hospital, Baltimore, Md.

Dr. D. C. Boatwright,

Who has for several years been connected with the medical staff of the Southwestern State Hospital, at Marion, Va., recently resigned his position and is now engaged in private practice in Marion.

Dr. W. L. Varn,

South Hill, Va., has been appointed chairman of the committee on Aims and Objects of the local Rotary Club, of which he is also vice-president.

Dr. A. T. Sheffield,

Formerly of Suffolk, Va., but who has been in Northern Virginia for some time, has located at Sperryville, Va., where he is engaged in general practice.

Dr. Charles H. Patterson,

Who has just completed his internship at the Virginia Baptist Hospital in Lynchburg, Va., has located in that city, with offices at 1111 Church Street, for the general practice of medicine. He is an alumnus of the University of Pennsylvania in the class of '30, and the following year was at City Memorial Hospital, Winston-Salem, N. C.

Dr. Wade H. Carter,

Who practiced for sometime at Osaka, Va., announces that he is now located at Newport, Va.

Dr. Henry S. Plummer,

Rochester, Minn., was elected president of the American Society for the Prevention of Goiter at its annual meeting in Hamilton, Ontario, early this summer.

The Southside Virginia Medical Association

Is to hold its regular quarterly meeting at Piedmont Sanatorium, Burkeville, Va., on September 13th. A large attendance is expected for the interesting program being arranged. Dr. W. W. Wilkinson, La Crosse, is president, and Dr. R. L. Raiford, Franklin, secretary.

Negro Hospital to be Constructed in Richmond.

Construction is to be started very shortly on a Negro hospital and nurses' training school in Richmond, Va. This will be on land adjoining the grounds of the Virginia Union University. The first unit will be a two-story building and basement and, in addition to other departments and necessary facilities, will have private and semiprivate rooms for patients and ward facilities.

Hourly Nursing Service.

The Private Duty Nurses' Club of Richmond, Va., announces the inauguration of an Hourly Nursing Service, in which its members are subject to call for service in all branches of the work that can be adequately performed in the home, at the following rates: $1.50 for the first hour or less, and 50 cents for each additional hour or fraction thereof.

The Club realizes that due to the present economic situation there is a pressing need for a service of this kind in Richmond, which has heretofore been furnished only by the I. V. N. A. The adoption of a similar movement will render a distinct service to the people who do not care for or cannot afford a full time nurse. It will also help to solve the unemployment situation among members of the Private Duty Nurses' Club.

For information, dial 3-1656. (*Adv.*)

For Sale—

Latest model Spencer microscope. Slightly used. At reasonable price. Address "Mike," care this journal. (*Adv.*)

Wanted—

A young active physician for a rural practice in Northern Virginia, 50 miles from Washington, D. C. Very small town, large territory, much hard work, good income, nothing to sell.

In answering, state age, school and year of graduation, married or single, number of children with ages, religion, native State, whether or not licensed in the State of Virginia. Address Box 222, Warrenton, Va. (*Adv.*)

For Sale—

Established Eye, Ear, Nose and Throat Practice in large Virginia city, with all instruments necessary for this work. Reasonable office rent. Reason—leaving the State. Address No. 357, care this journal. (*Adv.*)

Wanted—

Position as technician in hospital or physician's office. College graduate. Laboratory training at University of Virginia Hospital. Address "Miss R. S.," 1221 Wasena Terrace, Roanoke, Va. (*Adv.*)

Obituary Record

Dr. Edward C. S. Taliaferro,

One of the best known and most beloved physicians in the State, and President of the Medical Society of Virginia in 1921-22, died at Saint Vincent's Hospital, Norfolk, July 28, 1932, of complications following an operation on July 19th, for gangrenous appendicitis. Dr. Taliaferro was fifty-seven years of age and had been identified with the profession of Norfolk for over thirty years, serving first as interne at Saint Vincent's Hospital; then, after practicing in his native County—Gloucester—for two years, and taking a post-graduate course in Vienna, he returned to Norfolk in 1902, and was on the Staff of Saint Vincent's Hospital until his death, serving one term as its president. He was, at the time of his death, also a member of the Staffs of the Norfolk Protestant Hospital and the Memorial Hospital.

He was educated at William and Mary College, following which he studied medicine and graduated at the Medical College of Virginia in 1898. He was a fellow of the American College of Surgeons, and a member of its Board of Governors, and also a member of the House of Delegates of the American Medical Association. He was an ex-president of the Norfolk County Medical Society, the Seaboard Medical Association and the Medical Society of Virginia; was a member of the Phi Beta Kappa (Hon.), Kappa Sigma, Phi Gamma Mu, and Phi Kappa Phi (Hon.) fraternities. He was a 32nd degree Mason, a Knight Templar and a Shriner and was buried with Masonic honors. He was reared in the Episcopal church and, for a number of years prior to his death, served as a vestryman in Saint Paul's church of Norfolk.

He had been specializing in recent years in surgery and gynecology and was considered an authority on the use of radium in the treatment of malignant diseases.

Dr. Taliaferro is survived by his wife—*nee* Miss Alice Serpell, of Norfolk, two daughters and one son.

His burial was at Gloucester, Va., and the funeral at Ware Episcopal Church, that place, was largely attended by people from the surrounding country and from Norfolk.

P. St. L. M.

Resolutions on Death of Dr. Taliaferro.

It is with profound sorrow and the knowledge of a great loss that the Norfolk County Medical Society records the untimely passing of Edward Carrington Stanard Taliaferro, one of its most distinguished and beloved members.

Dr. Taliaferro's professional life was marked by an unusual degree of success and many well deserved honors were conferred upon him. He was a member of the Norfolk County Medical Society, staffs of St. Vincent's, Protestant and Memorial Hospitals, Medical Society of Virginia, American Medical Association, Seaboard Medical Society, the Tri-State Medical Association, and a fellow of the American College of Surgeons. He was also a member of the board of governors of the American College of Surgeons and of the House of Delegates of the American Medical Association. He was an ex-president of the Norfolk County Medical Society, staff of St. Vin-

cent's Hospital, Medical Society of Virginia, and Seaboard Medical Society.

Dr. Taliaferro's attractive, lovable and characteristic personality will continue to live in the thoughts and memories of a vast number who had the privilege of knowing him. It is impossible to adequately express our appreciation of his character. It was of the highest type, combining every quality which is admirable. Therefore, be it

RESOLVED, That in the death of Dr. Edward C. S. Taliaferro, the Norfolk County Medical Society has sustained a lamentable and irreparable loss. Be it further

RESOLVED, That a copy of these resolutions be spread on the minutes of the Society and a copy sent to his family and alo to the VIRGINIA MEDICAL MONTHLY and the local papers.

The sympathy of this Society is extended to his bereaved family.

JULIAN L RAWLS,
W. P. MCDOWELL,
B. R. KENNON,
C. J. ANDREWS,
Committee.

Resolutions adopted by the MEDICAL STAFF OF SAINT VINCENT'S HOSPITAL, on the death of Dr. E. C. S. Taliaferro.

Whereas, It has been the will of our Heavenly Father to call from our midst our beloved co-worker, Dr. Edward C. S. Taliaferro;

Whereas, Dr. Taliaferro has been closely identified with Saint Vincent's Hospital for over thirty years—first, as interne, and later, after taking a post-graduate course in Vienna, as member of the visiting staff, serving at various times on every committee, and once as its president;

Whereas, He has at all times contributed to the success and upkeep of the hospital—being always in the forefront of every move for the advancement of science and high standards of medical ethics;

Whereas, In the death of Dr. Taliaferro the hospital, as well as the whole profession, has lost a genial, sincere friend, a conscientious and able surgeon, and a radium expert. Therefore, be it

RESOLVED, That we, the Visiting Staff of Saint Vincent's Hospital, do hereby wish to express our deep sorrow at the loss of our friend and brother, and extend our sincere sympathy to his family and relations. That a copy of these resolutions be sent to his family; that they be recorded in the minutes of this body, and published in the VIRGINIA MEDICAL MONTHLY and the local paper.

Signed: P. ST. L. MONCURE,
WALTER B. MARTIN,
J. WARREN WHITE.

The members of the NORFOLK PROTESTANT HOSPITAL STAFF, conscious of their own very deep grief, desire to convey to the family their overwhelming sense of loss in the death of their friend and associate, Dr. E. C. S. Taliaferro. The staff also wishes to make a matter of permanent record its appreciation of his outstanding accomplishments in his profession and of his personal virtues and attributes, which entitled him truly to be known as "the Beloved Physician."

His attainments in his chosen profession and the honors with which he was rewarded are too well known to need repetition. His qualities of character, which endeared him to all of his associates and to everyone fortunate enough to know him, will always remain fresh in our memory. With cheerfulness and modesty he went among us. Absolute honesty and sincerity marked him. Charity to everyone possessed him. Whenever controversy arose his counsel was sought. Bitterness was removed through the influence of his magnanimous spirit. His departure has left us with sorrow in our hearts, but the very tragedy of his sudden going has impressed upon us those outstanding qualities of character which made him a man without reproach. Be it, therefore,

RESOLVED by the staff of the Norfolk Protestant Hospital, That these expressions of feelings, together with our deepest sympathy, be sent to the family of Doctor Taliaferro; that they be spread upon the minutes of this organization, and that a copy be furnished the VIRGINIA MEDICAL MONTHLY and the daily press.

Signed:
WALTER B. MARTIN, *Chairman.*
L. FREELAND MAGRUDER.
J. L. RAWLS.

Dr. Mark Wallace Peyser,

For thirty-nine years secretary of the Richmond Academy of Medicine, died July 29th, after having been in failing health for several years. He was a native of Washington, D. C., and sixty-two years of age. Upon completion of his academic education, he studied medicine at the University of Virginia from which he obtained his medical degree in 1890. He was for some years connected with the faculty of the former University College of Medicine of this city and later the Medical College of Virginia. In the past few years he had been associated with Stuart Circle Hospital, this city, as director of its department of physiotherapy. He was a member of and for several years treasurer of the Medical Society of Virginia. Dr. Peyser was a man of many talents. He was a most able physician, the possessor of many friends, and a man who had the strictest regard for professional ethics. He is survived by his widow, Mrs. Eva Ezekiel Peyser, and two brothers.

Resolutions on Death of Dr. Sims.

At a meeting of the Riverside Hospital Staff, Newport News, Va., held June 22, 1932, the following resolutions were unanimously adopted:

Whereas, It has pleased the all-wise Creator to remove from our midst our comrade, Dr. Thomas Jackson Sims, who passed to his reward on June 9, 1932, after an illness of several weeks;

RESOLVED, That in the death of Dr. Sims the profession has lost a valuable member, and the community an outstanding citizen. Dr. Sims upheld the best traditions of his profession; he took a keen interest in the welfare of his patients and at all times he gave to them his best ervice. He was a humanitarian, a Christian soldier, a most useful churchman and was a stepping-stone for humanity to reach nobler heights.

RESOLVED, That these resolutions be spread on the minutes and a copy be sent to the bereaved family.

B. R. GARY,
SAMUEL DOWNING,
W. S. SNEAD.
Committee.